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Commercial And Industrial Activity In San Francisco:

Present Characteristics And Future Trends

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**Report to
San Francisco Department
of City Planning**



Arthur D. Little, Inc.



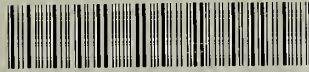
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COMMERCIAL AND INDUSTRIAL ACTIVITY
IN SAN FRANCISCO:
PRESENT CHARACTERISTICS AND FUTURE TRENDS

report to

SAN FRANCISCO DEPARTMENT OF CITY PLANNING

June 1975
C-77668

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Commercial and
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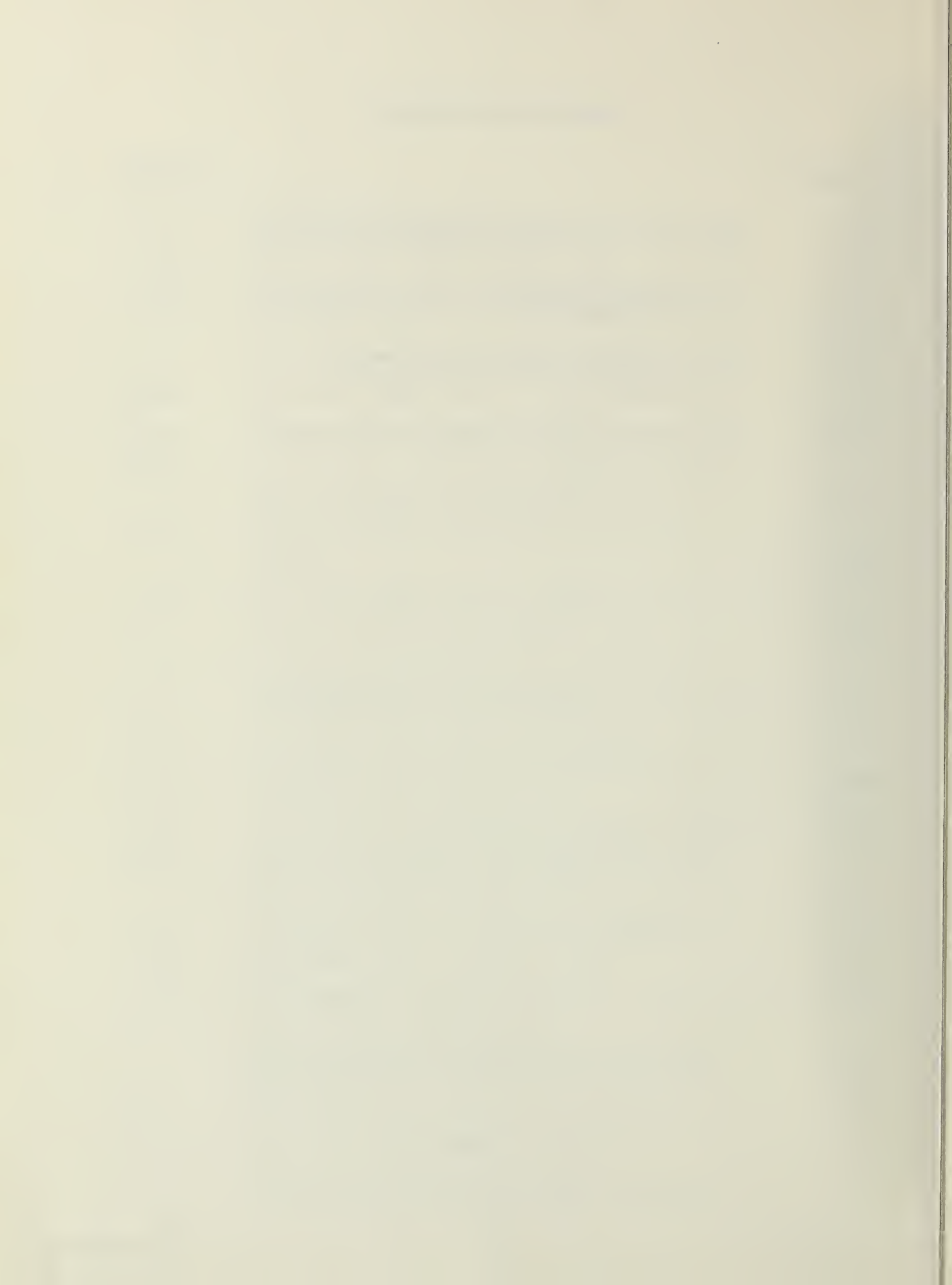
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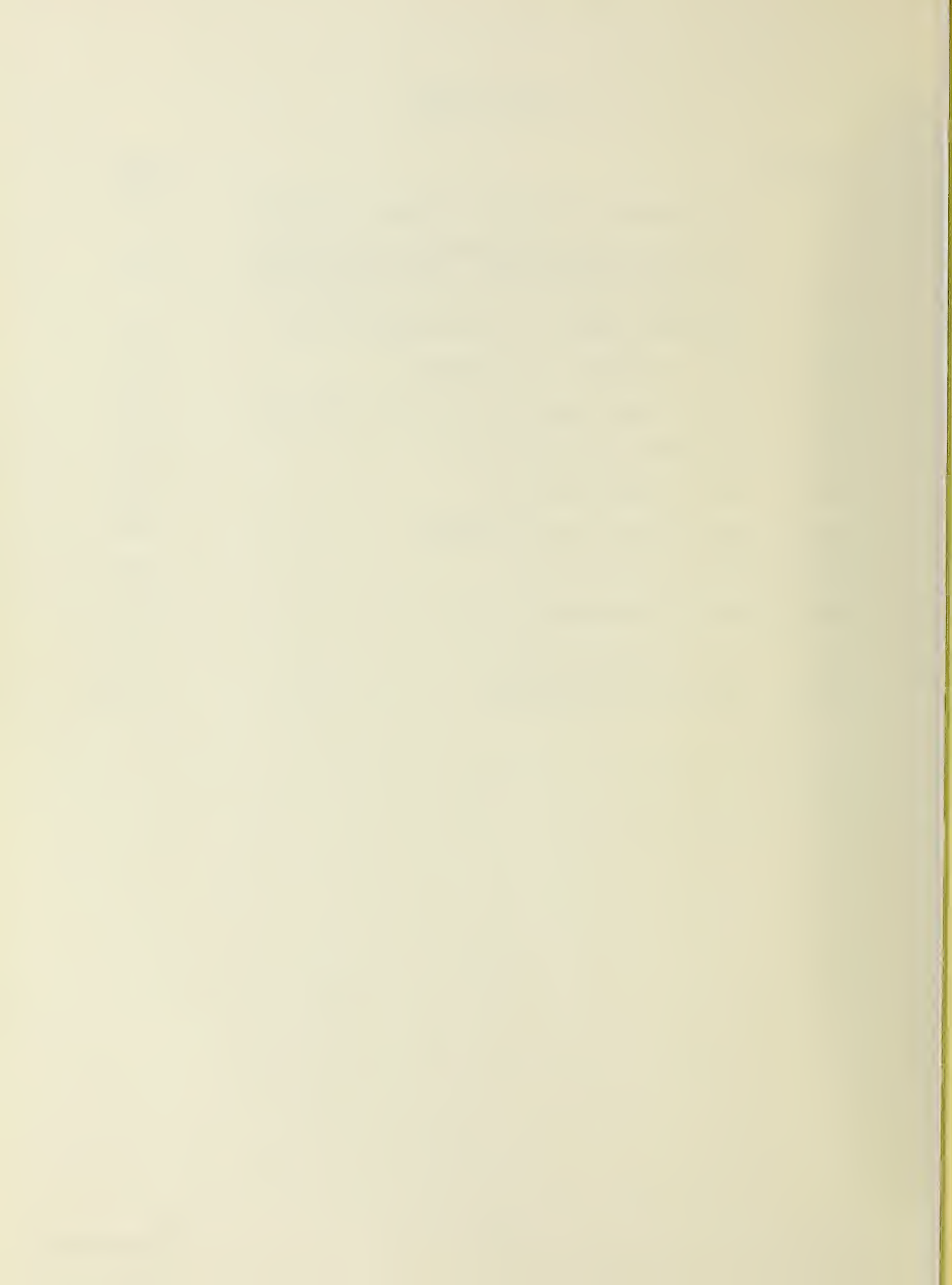
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I. SUMMARY OF KEY FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

A. PURPOSE

This report summarizes the findings of a study which was undertaken for the San Francisco Department of City Planning by Arthur D. Little, Inc., in order to:

1. Analyze the economic structure of San Francisco and project future employment and land use trends,
2. Estimate the major impacts of the projected trends on the city and its residents,
3. Evaluate the desirability and feasibility of public intervention to alter trends, and
4. Suggest alternative strategies for the city's commercial and industrial areas.

B. SCOPE

The study included two interrelated elements: economic analysis and land use analysis. The economic analysis centered on:

1. An analytical examination of San Francisco's economic structure and the factors determining the competitive position of the various activities which make up the city's economy,
2. Employment projections by major industry group and major occupational category,
3. The probable employment, income, and fiscal impacts of the projected declines in manufacturing and wholesale activities, and
4. The desirability and feasibility of trend alteration.

The land use analysis centered on:

1. The location of declining, stable, and expanding employment sectors,
2. The locational preferences of individual industries,
3. The estimation of where existing employment concentrations will expand or decline, and
4. The impact of changing economic activity upon land use in major commercial and industrial districts.

Based on these analyses, the study identified possible public action which may affect future locational decisions and strategies for the major commercial and industrial districts.

C. KEY FINDINGS AND CONCLUSIONS

1. The City's Economic Structure

- The city's economic structure is determined by (a) "objective" factors which relate to San Francisco's function as a major urban center and (b) "subjective" factors which are unique to the city (i.e., historical developments, specific intraregional and interregional linkages, etc.). While many specific activities depend on subjective factors, the overall economic structure of San Francisco is primarily affected by its economic role as a major, high-density urban center.

- Between 1962 and 1972 manufacturing employment in San Francisco declined by 11,933 employees. During the same period manufacturing employment in the rest of the SMSA declined by 800 jobs, reflecting the fact that the rest of the SMSA enjoys a competitive advantage over San Francisco, but is not a strong region in the national setting.

- Between 1958 and 1973 San Francisco's total employment increased by 12.4% to 528,500, which yields an average annual rate of 0.78%. Most of the growth occurred during the four-year period between 1965 and 1969 when employment grew at an average annual rate of 2.3%. At the beginning of the period (1958) government was the largest sectorial employer in the city with manufacturing the second largest and services a very close third. During virtually the entire 15-year period, services grew at a high and steady rate (3.29% average annual rate) becoming the largest employment sector while manufacturing declined steadily, at a 1.78% average annual rate, dropping to sixth place in terms of sectorial employment.

- The decline in manufacturing activities reflects the city's overall competitive disadvantage in that sector. Though the magnitude of that disadvantage in San Francisco is greater than in other urban centers, the trend itself is universal (i.e., all cities of similar size and function show significant declines in manufacturing employment). This trend is due primarily to national developments (such as population shifts and technological advances) which are not susceptible to significant influence by city policies. The significantly higher-than-average wage rate paid in the city (and the SMSA) by most manufacturing industries also contributes to this competitive disadvantage.

- A most unique feature of the economic structure of San Francisco is the high ratio between finance, insurance, and real estate (FIRE) employment and manufacturing employment. That ratio in 1972 was 1.3 which was almost 6 times the U.S. employment ratio between the FIRE and manufacturing sectors, about 5 times the ratio for California and the seven Bay Area counties (excluding San Francisco and Santa Clara counties), and more than 10 times the ratio for Santa Clara County.

- Food manufacturing industries in San Francisco have declined at a significantly higher than average rate. The comparative decline of the food industry in San Francisco is due to (a) an overall decline in the comparative advantage of the entire SMSA and (b) general locational trends of the industry in the United States which reduced the comparative advantage of central city locations for food manufacturing.

- The apparel industry is the second largest manufacturing industry in the city and the only one to realize a significant absolute employment growth. Employment in the industry increased by 1469 employees during the 1962-1972 period and by 1294 additional employees between 1972 and 1973. The industry's employment of 9376 workers represented 17.3% of total manufacturing employment in 1973. The industry's growth in the city reflects San Francisco's strong competitive advantage in the apparel industry. The city's strong competitive advantage, especially in the production of women's outerwear, is due to two major factors: the city's ability to attract successful specialized fashion designers and the availability of a low-cost, mostly nonunion labor force.

- Employment in the furniture and fixtures industry in San Francisco declined from 1777 employees in 1962 to 1196 in 1972 to 1212 in 1973. The decline occurred primarily in large-scale activities as indicated by the general decline in the average employee per establishment values in the city. The industry's overall decline in San Francisco is not the result of a uniform and steady downward trend. The recent period should actually be divided into two main periods, 1959 to 1965 and 1965 to 1973. The first period shows a significant employment decline due primarily to the out-migration of large establishments. The second period, on the other hand, shows a high degree of overall employment stability -- 1178 employees in 1966, 1168 employees in 1972, and 1212 employees in 1973.

The changes in the industry's activities in San Francisco reflect the city's competitive disadvantage in large-scale activities, while retaining some advantages for certain smaller-scale activities. The increase in the amount of land required for large-scale production increases the competitive advantage of non-central city locations.

- Employment in the paper industry in San Francisco declined from 1075 employees in 1962 to 634 employees in 1972. The decline was primarily due to the out-migration of two large establishments. Given the factors which determine the location of paper activities, the significant economies of scale in the industry, and San Francisco's economic structure, envelope manufacturing is the only large-scale activity which can enjoy a competitive advantage in the city -- the major source of that advantage being a distribution advantage realized by the proximity to the large number of individually small customers in the city. The city's economic structure per se does not indicate any likely significant growth or decline in employment.

● Printing and publishing is the largest manufacturing industry in San Francisco, accounting for about 18.8% of the sector's employment in 1972. The industry's share of manufacturing employment increases to 23.1% when administrative and auxiliary activities are excluded. Employment in the industry declined from 12,217 in 1962 to 9997 in 1972. Most of the decline of 2220 jobs took place in the newspaper printing industry, which dropped by 1278 jobs: this was primarily as a result of the consolidation of the two major city papers in the 1960s. The largest employee group -- commercial printing -- showed remarkable overall employment stability with virtually the same level of employment in 1972 (4377) as in 1962 (4352). ^{newspaper printing} Employment in the industry will probably not change significantly in the long run as a result of conflicting and offsetting trends. Technological advances, on the one hand, are likely to reduce the amount of labor required for a given quantity of output, while increased demand due to growing Bay Area population combined with rising income and education levels will, on the other hand, increase the demand for newspapers.

● Employment in the chemicals and allied products industry in San Francisco declined by 43.3% between 1962 and 1972. In 1972 the industry employed 1141 workers in the city. The major industry group in the city in 1972 was the paints industry which accounted for 541 jobs. Wages in the industry are high, with the average wage in San Francisco being about the same as in the nation as a whole.

The industry as a whole enjoys significant economies of scale, with most outputs having a national market area. The overall market orientation of the industry does not, therefore, favor a San Francisco location. A city location for most chemical industries is due primarily to historical reasons rather than an urban locational advantage. Small firms which serve primarily city customers are likely to stay in San Francisco and expand, with larger establishments moving out of the city. The likely net effect would be relatively small overall employment changes.

● In 1972 there were 4277 fabricated metal workers in San Francisco. The 27.2% decline since 1962 is due primarily to the out-migration of one large establishment (500 and over employee category) and a decline in the number of other larger-than-average establishments. Wages in the industry are relatively high, with those in San Francisco being much higher than in all other areas.

● Employment in the nonelectrical machinery industry in San Francisco declined from 3099 in 1962 to 2039 in 1972. The major factors responsible for the industry's decline in San Francisco are (a) the lack of strong city market orientation of larger establishments which serve regional or national markets, (b) the internal growth of firms due to economies of scale, and (c) an overall city competitive disadvantage for relatively large establishments which are not city market oriented either in relation to their inputs (including labor) or their outputs.

- The decline in the transportation equipment industry in San Francisco (from 4063 in 1962 to 1718 in 1972 and 1390 in 1973) is due to the decline in the ship building and repairing industry (from 3334 in 1962, to 1337 in 1972, to 1056 in 1973). The 68.3% employment decline in San Francisco during the 1962-1973 period is not due to a national decline of the industry but to the industry's competitive disadvantage in the city (total U.S. employment during that period increased by 27.4%).

By their very nature shipbuilding activities are not city-market oriented and their competition is worldwide. The significantly higher average wages in San Francisco (26.3% higher than the national average in 1972) also contribute to the city's disadvantage.

- Administrative and auxiliary manufacturing employment in San Francisco provided 9927 jobs in 1972. This amount accounted for 18.7% of total manufacturing employment in the city. This is a much higher percentage than in the nation as a whole (5.5% in 1972), reflecting the city's competitive advantage as a location for such activities. That advantage is, however, declining relative to the rest of the SMSA.

- San Francisco has shown considerable strength in most transportation, communications, and utilities activities resulting in a higher relative overall sectorial growth than the nation and all the other urban centers with which the city was compared. Total employment in the sector increased from 41,800 in 1962 to 50,608 in 1973. The sector as a whole is expected to grow, though probably at a lower rate than during the 1962-1973 period. Identified growth areas include air transportation, communications, and electric, gas, and sanitary services.

- According to conservative estimates, employment in the wholesale trade sector declined from 44,240 in 1962 to 40,482 in 1973. State of California Employment Development Department estimates show a larger decline from 46,400 in 1962 to 37,700 in 1973. The sector's decline in the city was more than offset by its growth in the rest of the SMSA, resulting in a net increase of approximately 13,000 jobs in the SMSA during that period. The decline in the city's competitive advantage is due to the same general factors which produced a competitive disadvantage in the manufacturing sector as a whole -- i.e., population shifts, economies of scale, cost of land, taxes, etc. Even after the recent declines in sectorial activities, however, the city still remains a major wholesale center in comparison to the rest of the SMSA, the nation, and other similar urban centers. Based on recent trends in the city and other similar urban centers, the sector is expected to continue to lose its competitive advantage and decline by approximately 20% by the end of the century.

- Offsetting trends in San Francisco population on the one hand, and income, in-commuters, and visitors on the other hand, have resulted in overall stability in retail employment since 1958. Since retail trade is primarily a population support sector, its future will depend largely on what will actually be the rate of population growth or decline in the city.

- The finance, insurance, and real estate sector in San Francisco has shown a considerable and continuous competitive advantage over the rest of the region and the nation. The city's comparative advantage in these activities is a direct result of San Francisco's historical development and its present economic structure and functions. The higher-than-average rate of growth of the sector in San Francisco increased its employment share in the city to 12.8% of total 1973 employment (or 14% of total wage and salary employment). Banking activities have become the pre-dominant industry in the sector, accounting for 39.2% of total sectorial employment in 1973.

- Due to the decline in the city's population, the increase of employment in population support and service activities increased at a much lower rate than in business-oriented activities, with one notable exception: medical services, which increased by 57.9% during the 1962-1973 period (from 11,555 to 18,243). Personal services realized an employment decline during the same period, from 6512 to 5229.

- Government employment in San Francisco has growth from 74,500 in 1962 to 87,000 in 1973 according to California Employment Development Department statistics. The 11-year period is not characterized by steadily increasing employment but rather by yearly increases in employment from 1962 to 1969, when employment reached 94,500, followed by a constant decline to the 87,000 employed in 1973. Even with a constant employment decline since 1969, government is still the second largest sectorial employer in San Francisco. Its share of total employment in the county was 17.6% in 1972 (compared to 19.5% in services).

2. Future Employment Trends

- Total employment in the city may range from 555,000-640,000 jobs in 1985 and from 605,000-710,000 jobs in 2000, depending on the rate of decline in manufacturing and wholesaling and the rate of growth of services, FIRE, and government.

- Based on average projections, employment in manufacturing is projected to decline by about 4500 by 1985 and an additional 3000 by the year 2000. The actual range is between a few hundred and almost 15,000 jobs by the end of the century. The wide range between the high and low projections is due primarily to the uncertain future of some key industries (e.g., printing and publishing, apparel, etc.) rather than public policy considerations: in other words, it reflects high susceptibility to factors other than policy intervention.

- Though manufacturing employment is expected to decline by over 7500 by the year 2000, only an average of about 3500 of these jobs are expected to be held by city residents. Most of these residents should have only minor difficulties in obtaining other positions in the expanding city economy. The "actual" employment impact of the projected decline in manufacturing is limited to the loss of 1275 blue-collar jobs expected to be held by city residents in 2000. Most of this projected decline is expected to occur in food, metal products, machinery, and transportation equipment. While the negative employment impact of the projected decline is considerable, the analysis shows only a minor beneficial impact associated with an actual

increase in manufacturing employment. In other words, arresting the decline if it were feasible, could prevent a significant negative impact; inducing net growth in manufacturing, on the other hand, will have only a minor impact on unemployment rates for residents since virtually all new manufacturing jobs are expected to be filled by noncity residents having little effect on unemployed city residents.

- The city has had a comparative^{and} competitive advantage in wholesale trade activities. This advantage, however, has been steadily declining and will continue to decline, resulting in the loss of an average of 8000 jobs in the sector by 2000. The decline in the city's competitive advantage is due primarily to the same general factors which produced a competitive disadvantage for the manufacturing sector as a whole -- i.e., population shifts, technological advances, and high wages. The employment impact of that decline on city residents is basically limited to the loss of 690 blue-collar jobs.

- The major comparative advantage of San Francisco will continue to be in various finance, insurance, real estate, and service activities. These sectors are expected to retain and actually increase their predominant positions in the city. The employment will continue to be generated either directly or indirectly by out-of-city demand. While most new jobs in these sectors are expected to go to nonresidents, the percentage of city residents in FIRE and services will be significantly higher than in all other sectors except retail trade.

- The city's economic structure and the importance of agglomeration effects in finance, insurance, and real estate activities indicate continuous growth to a probable employment level of 100,000-110,000 in the year 2000. It is expected that banking activities will account for most of the future sectorial growth and thus increase their sectorial employment share to more than 50% by the end of the century.

- Employment in the services sector is expected to grow at a much higher-than-average rate with business services, medical services, and educational services accounting for about 70% of future growth. Total sectorial employment is expected to grow by about 60,000 jobs and employ between 157,000-173,000 workers in the year 2000.

- Government employment is projected to increase to between 95,000 and 110,000 by 1985 and to between 105,000 and 125,000 by the year 2000. The projections are based upon the long-term trend from 1962 to 1973 rather than on the recent decreases in employment. The recent decline in employment is taken to be a moderating influence on employment growth rather than a continuing trend.

- Employment in the transportation, communications, and utilities group is expected to increase by over 4000 jobs by 1985 and by over 6000 jobs by 2000 under the average-level projections. Total employment could be greater or less depending on the rates of decline in employment in trucking and warehousing and water transportation or growth in communications and utility services. Most of the projected growth in employment under all projections is in communications, electric, gas, and sanitary services, and local and interurban passenger transit.

- Employment in retail trade is expected to increase slightly by 1985 with more significant gains possible by the year 2000, depending on population changes in the city and, to a lesser extent, on increased overall employment and tourism. By 1985, it is expected that 35% of employment in retail trade will be in eating and drinking places.

- Employment opportunities will increase significantly in the professional, managerial, clerical, and services categories under all the projections. The projected increases in these categories will be more than sufficient to satisfy the employment needs of qualified city residents.

The number of jobs available for laborers will continue to decline because of technological changes. Employment opportunities for sales workers, craftsmen, and operatives will depend on the actual employment scenario. The number of sales jobs probably will remain constant; the number of jobs for craftsmen and operatives will decline between 1% and 15% by the year 2000. The employment impact of these declines on city residents will be limited because of the continued out-migration of craftsmen and operatives.

- The city's ability to arrest the projected employment declines in the manufacturing and wholesale trade sectors is limited by (a) the nature of the factors responsible for the projected declines and (b) various legal constraints. Due to these constraints, a trend reversal in these sectors will require high-cost programs (such as a major redevelopment effort combined with significant subsidies) which cannot be justified on the basis of the potential benefits for city residents. Probably benefits do, however, justify the adoption of low-cost public programs which will slow the rate of decline.

- Long-term unemployment can best be treated by programs designed to improve the skills and the mobility of the city's labor force rather than by costly programs which will primarily benefit nonresidents.

- Increased in-commuting has both positive and negative effects on the city and its residents. Additional study will be required for suggesting strategies which could reduce the negative effects while retaining the major positive contributions of the in-commuting labor force.

3. Industrial Site and Locational Preferences

a. General Factors Determining Industrial Locations

- The locational decisions of any firm involve short-run and long-run locational decisions. The short run is usually defined as a period during which some factors are fixed, while the long run is that period into the future where all factors are changeable. The fixed factors, and thus the short run, differ from activity to activity and from firm to firm.

- In the long run the location of firms is more likely to be affected by changing circumstances than in the short run since the former allows them greater locational flexibility. This distinction is particularly important in terms of potential industrial possibilities in San Francisco, for as has been shown in the past, a decision by a large manufacturing firm to relocate greatly increases the possibility that the firm will relocate out of the city.

- In the recent past, San Francisco has not been attracting new manufacturing establishments into the city to any significant degree. Losses in employment in manufacturing and related activities have resulted from the out-migration or closing of established firms and the lack of new entrants.

- Land use in the city will continue to change in response to two types of effects -- first, the passage of time during which the short run is gradually transferred into a long-run decision allowing firms and individuals to react to changes which have already occurred, and second, a change in the factors determining the location of economic activities which will affect future locational decisions.

- Over recent years there has been a tendency toward expansion of the market areas of major producers from the local to the regional level, resulting in a preference for a location which is accessible to areas of growing population; there have also been technological changes which have reduced the influence of weight and perishability. Market-oriented activities tend to locate near the center of gravity of their appropriate market areas.

- Over the past decade, a substantial part of the decline in the food, ~~printing~~, and building materials industries in San Francisco can be explained in terms of consumer market shifts caused by a redistribution of population in the region ^{and} by technological changes in production.

- The printing industry is an example of an industry which is very market-oriented and tends toward central locations because of the need for frequent and close contacts with its customers. Growth of demand from financial institutions, advertising and retailing, administrative headquarters, and business services in the central urban locations increases

the demand for printing services which can be supplied on short notice. However, even in this industry, where the demand for printing services involves long-term orders of massive amounts (such as a large corporation's annual report) it is possible for a large producer to locate at a great distance from the client.

- In retail trade, various activities tend to have a different market area and therefore have different locational patterns. Some shopping goods, such as diamonds, have a citywide or regionwide market area. The market orientation of such activities requires a center city location and an agglomeration of activities. Not all shopping goods with a citywide market area locate at the center. Auto dealers, for example, usually do not locate at such locations though they tend to locate close to other dealers. The reason for a non-downtown location is their large land requirements which reduce the value per square foot of these activities below that of other less land-intensive activities with which they must compete for downtown sites.

b. City vs. Suburb: External vs. Internal Economies of Location and Site

- The city versus suburb locational issue involves several basic siting considerations. First, an industrial establishment may reduce costs, increase output, or both through improved plant design, use and layout, materials handling, and equipment. "Internal economies of location" are those that accrue from an improved industrial plant. Over time, the search for improved plants and "internal economies of location" had led to the construction of single-story plants on large tracts of land in suburban areas. Second are external economies of location. A firm's profitability may be dependent primarily on accessibility of workers, services, markets, and suppliers -- necessary ingredients in production which are external to the plant itself.

- For firms where external economies of location outweigh the desirability of internal economies of plant layout, a central urban location is likely to be preferred, and often is a necessity. However, as manufacturing in the nation in general tends toward greater agglomeration and larger establishment size, the number of small, specialized firms is likely to decline and with this the demand for central urban locations.

- Thus, establishment size, rather than type of product, may often be more determinative of choice between city and suburban locations. The general factors mentioned before most often affect the location of establishments as among regions and states; with respect to intraregional location choice, plant size may be determinative at least in those industries which are not strongly influenced by a critical factor such as product perishability or labor force availability.

c. Key Factors Affecting the Locational Decisions and Site Preferences of San Francisco's Major Manufacturing Industries

- The major employers in San Francisco's food and beverage industry serve national markets and have been located here either because they were started by residents and grew or because national firms located plants here when San Francisco was still the center of the market in the Bay Area. Today there is less reason for a San Francisco location. The center of the market has shifted east and south with the growth of Alameda, Contra Costa, and Santa Clara counties.

- Large segments of the apparel industry have a natural tendency to locate in a city such as San Francisco, rather than in surrounding suburban locations. They have very specific site and location preferences within the city. Because a very high proportion of the work force consists of women who make relatively low wages, reliable and quality transit access is essential; security is also an important factor.

- To date there have been compelling reasons to stay in San Francisco, including the attractiveness of the city to designers and managerial personnel, a large labor force with skills in the industry, the availability of transit access for employees, and the availability of inexpensive loft space.

- In the fabricated metals industry, most employment in San Francisco is in light metal products and metal product services, although there is some structural steel fabrication. Average firm size is approximately 48 employees.

- Existing firms in metal product fabrication are unlikely to move often because of investment in heavy equipment which is expensive to dismantle and relocate. However, when expansion is required, if adjoining land or buildings are not available, a move will be forced and a move out of the city is likely for two major reasons: the relatively high cost of land, compared with locations on the Peninsula or in the East Bay; and the impact of the total tax burden in San Francisco on the industry.

- There are four categories of firms in the printing and publishing group: publishers, commercial printers, bookbinders, and printing trade services, such as plate engraving. San Francisco has never been a publishing center and little employment in this category is found in the city, other than in connection with local newspapers.

- The typical firm is very small and space requirements for any one firm are not great, ranging from 5000-10,000 square feet. Space requirements are typically about 400 square feet per employee. For the highly competitive job printers, easy access to potential clients is very important because frequent communications are required and speed is often an essential part of the service offered.

- South of Market has traditionally been and will also certainly continue to be the preferred location for the printing industry. It is reasonable to say that for the commercial printers, as for much of the apparel industry, there is no alternative location in the city to the South of Market and Downtown fringe areas.

- The site and locational preferences of other manufacturers in the city can generally be correlated with firm size. Small firms tend to rent, rather than own, and therefore to seek general industrial space in small quantities in older buildings at low rentals.

- South San Francisco is becoming an increasingly receptive area to firms formerly located in San Francisco, particularly for firms requiring cheaper land in larger amounts, desiring ready access to air freight and rail lines, and seeking to avoid the city's relatively higher overall tax burden.

- Due to the overall decline in manufacturing in the city, many of its industrial areas are unattractive -- being dotted with abandoned or unmaintained buildings, crisscrossed with poorly planned streets and rail lines, and involving mixtures of open-air storage, "messy" and clean industries. These conditions, typical of older central city industrial areas, make these sections of the city relatively unattractive to "high profile" image industries such as instrument and electronics manufacturers who are less sensitive to land and building costs than to overall area attractiveness.

- Like most central cities, San Francisco offers two major advantages to manufacturing firms in a variety of fields: inexpensive, generalized industrial space in existing buildings and ready accessibility to various services, suppliers, and customers.

- Those industries still attracted to the city are generally those seeking the kind of existing space which the city offers. Most of this space is found either in South of Market or in the Mission industrial district. However, because it appears that new entrants cannot compensate for the loss caused by out-migration of major employers, the total demand for industrial space generally is declining and has been for some time.

4. The Location of Economic Activity in San Francisco - Implications for Future Land Use Trends

a. Overall Distribution of Employment

- Above 60% of total employment in San Francisco is located east of Van Ness Avenue and north of China Basin Channel. The central Downtown area alone, bounded generally by Pacific on the north, Van Ness on the west, and Howard on the south, accounts for almost half of total employment on only 3% of the city's land area.

- Total employment in the city increased by 12% between 1965 and 1970; 80% of the net gain was north of China Basin Channel. The remaining gains occurred in the primarily residential areas of the city, a reflection of growth of employment in the services sector despite the decline in population.

- Over the next 10 years the area east of Van Ness and north of China Basin is expected to account for about 76% of net new employment; over the long-term projection period to the year 2000, its share is estimated to range from 66-71%. Downtown and South of Market are expected to house an additional 40,000 employees by 1985 with probably 30,000 more added between 1985 and 2000. Employment in the southerly industrial districts is projected to decline. Employment outside the major commercial and industrial districts is projected to increase by 17,000 jobs by 1985 and from 32,000-52,000 additional jobs by the year 2000, depending chiefly on growth in medical and educational institutions and services.

- Under the most probable projection scenario the eastern third of the city is likely to have a declining share of future employment due to expected declines in employment now concentrated in the traditional industrial areas. Absolute declines in employment are projected for the industrial areas below China Basin and for the Mission industrial district.

- Although the percentage share of new employment in the western residential parts of the city will not be great, absolute gains in employment could be quite high depending on the rate of expansion of employment in medical and educational services and on possible future increases in population.

- Employment in medical and educational services is projected to increase by 19,500-22,500 by the year 2000, of which 85% is expected to be accommodated outside the city's major commercial and industrial districts.

b. Industrial and Commercial Land Use

- In the 1960s, despite significant new construction of office space, total land area in commercial use declined a small amount, as did land in industrial use. Only three broad categories of use increased: residential, institutional, and public. Additional commercial uses are being accommodated on less land and land-intensive commercial uses, such as shopping centers, are not being built in San Francisco.

- Declines in retail and office use of land are probably due to elimination of considerable amounts of low-density retailing and small office uses in the Western Addition and South of Market by public and private redevelopment. Land in parking lots and used car lots, on the other hand, increased by almost 100 acres between 1961 and 1970.

- Land used for industry has declined since 1961. The vacancy rate of industrial land (exclusive of industrially-zoned tidelands) is estimated at 16.2% or 390 acres as of 1970. The vast bulk of this vacant industrial land is found east of Third Street between Islais Creek and India Basin.

- An increasing share of San Francisco's total employment is found in government and institutional services. Most of these uses are not found in the major commercial and industrial areas of the city and account for a large share of the employment found in residential parts of the city.

- Due to the fact that economic growth in the city is primarily translated into intensification of development rather than into conversion of areas from one use to another, there is no strong correlation between increases in employment, construction of new space, and amounts of land devoted to different uses. Most new office development has been accommodated and will continue to be accommodated through redevelopment of land already in commercial use.

- Net citywide demand for office and office-type institutional space is projected to increase by 17-27 million square feet by the year 2000, requiring construction of about 21-32 million square feet of new space, including provision for replacement of space demolished as a part of new construction. Seventy-five percent of new office space is projected to be built in the Downtown, South of Market, and Northeast districts. The forecast for the 1973-1985 projection period is a net increase of 11.8 million square feet involving new construction totaling about 14 million square feet.

- Demand for retail space is projected to increase by 700,000 square feet to 1985, with a probable demand for an additional one million square feet by 2000, depending on changes in city population. Projected increases in hotel rooms are estimated at 3150 rooms for the 1973-1985 period and for a total of 4200-7000 new rooms by the long-term 1973-2000 period.

- Demand for industrial space -- including manufacturing plant space and warehousing -- is estimated to decline by 2.7 million square feet through 1985, with a probable decline totaling 4.6 million square feet by the year 2000. A potential demand exists for new warehousing space of up to 700,000 square feet by 1985; whether such space will be constructed depends on the availability and cost of land.

- New office and institutional construction is expected to involve the new development on about 37 acres of land by 1985, with from 55-94 acres involved in either redevelopment for higher-density use or conversion from other uses by the year 2000. The relatively small amount of land involved is a reflection of current tendencies toward medium- and high-rise construction on land already occupied by older office buildings, land used for parking lots, and other parcels in low- or medium-intensity commercial use.

- New retail space, primarily built in response to demand generated by employees and tourists, will probably not require a ground floor area in excess of 12 acres (or one-third the ground floor area of new office development) by 1985. The future extent and location of other retail development will depend chiefly on resident population changes.

- Depending on city policy with respect to parking, potential demand for an additional 20,000 spaces could be realized by 1985, chiefly as a result of new employment; from 26,000-50,000 new spaces could be added by the year 2000 as a result of growth in employment, retailing, and hotels. Accommodation of this potential demand for parking would require at least as much land as that devoted to office space.

- Satisfaction of potential demand for new parking and for automobile services would require at least 50 additional acres of land in such uses by 1985 with up to another 50 acres added between 1985 and the year 2000, if parking is accommodated at the highest feasible densities. Based on past trends, this pattern is not likely without specific controls since 100 acres of new parking lot uses were added in the 1960s.

c. Locational Trends in Specific Major Industries

- According to available data there has been a substantial decline in employment in manufacturing activities formerly located in the Potrero-Central Basin, Mission, Army Street-Islais Creek, and Northern Waterfront areas. These declines occurred because industries once located in those districts -- particularly food processing and metal products manufacturing -- have declined as a whole or left the city and no significant new manufacturing activities have entered to take their place. In the case of the South of Market, however, new manufacturing activities, expansion of the apparel industry, and stability in the printing industry have contributed to maintenance of fairly stable manufacturing employment in the face of citywide declines. Industries located in the southernmost industrial areas of the city have also been stable.

- Decline in employment in the food processing and fabricated metal products groups has resulted in abandonment of industrial space which is not subject to reuse by other industries, particularly in the case of large plants, chiefly located in parts of South of Market and in the industrial areas adjacent to the central and southern waterfronts. Projected future declines of employment in these same industries will result in additional plant abandonments in the South of Market and the Mission districts, where many major establishments remain. Some large printing establishments have moved out of the city, releasing large industrial plants; however, the industry has been generally stable and has continued to be concentrated in Downtown and South of Market.

- The apparel industry is the only major manufacturing sector to expand employment in the past decade, resulting in some shifts in the location of firms. There is a noticeable movement of the larger manufacturers south to the Mission and Potrero districts. These shifts have not necessarily resulted in a major shift in the location of industry employment since those manufacturers who can move out of the more central areas generally depend on sewing contractors in Chinatown and South of Market for production of goods. Good transit service is essential to the sewing contractors because of the high proportion of employees who are women and the low wage rates. It is likely that a gradual southerly move of apparel manufacturers will continue, due to increasing difficulty in obtaining adequate amounts of inexpensive space in South of Market and due to forced relocation caused by new office development, particularly in the area east of First between Market and Howard.

- The South of Market area seems likely to maintain a role as a location for small firms in a variety of manufacturing activities due to the availability of a large inventory of space available for lease in varying quantities at relatively low rents. However, the absence of demand for large plants will result in increasing vacancies in the lower-intensity industrial areas south of China Basin.

- Employment in trucking and warehousing is generally concentrated in the area between China Basin Channel and just south of Islais Creek close to the port. In terms of land use, this area accounts for about 60% of total land used for trucking operations in San Francisco and 80% of land devoted to railroad operations. It is clear that this area is the freight transportation center for San Francisco, highly accessible to the Downtown business district, the industrial areas, the port's major facilities, and freeways.

Although there has been some decline in employment, there have been few changes in facilities; much of the decline in employment is the result of technological changes in goods handling. This pattern is expected to continue, so that future declines in employment will not necessarily mean a reduced demand for land for trucking and warehousing uses. New, more efficient truck terminals and warehousing facilities could require more land than is now devoted to such uses without any gains in employment.

- Most employment in communications and utilities industries is office employment in the Downtown and South of Market areas and is likely to continue to be accommodated chiefly in the South of Market area. Employment in transportation services is also chiefly office-type employment located in the same areas.

- Employment in wholesaling is concentrated in South of Market and the financial and administrative district. The predominance of this central area is due to the fact that most employment consists of wholesale agents and brokers and manufacturers' sales representatives, rather than merchant wholesalers who maintain stock-in-trade. Thus, wholesaling in San Francisco is primarily an office activity, located chiefly in the Market-Howard corridor.

- Merchant wholesalers are located farther south along Folsom, Bryant, and Harrison, as well as in the Mission, Potrero, and Apparel City districts, where cheaper space and more land are available for inventories. Increasingly, wholesalers who must maintain a stock-in-trade move farther south in the city or to suburban locations to obtain less expensive land and building space. Potential future demand for new wholesalers' warehouse space in San Francisco is expected to be satisfied in the Potrero, India Basin, and Apparel City areas where land is less expensive than in South of Market.

d. Central Business Activities: FIRE, Miscellaneous Business Services, Legal Services, Miscellaneous Services

- The expanding central business sectors in the city are the most centralized economic activities in the city. More than 75% of employment in finance, insurance, and real estate is located in the financial district spreading from the Golden Gateway Redevelopment Project on the north to Folsom on the south and from the Embarcadero to about Fourth Street. Employment in legal services is even more concentrated, located almost entirely in the old financial district north of Market Street. Employment in miscellaneous business services is also concentrated in the financial district and in the Market-Howard corridor from the Embarcadero to Van Ness. Over the past decade, employment in this industry group has been increasing as well in the Northern Waterfront area. Most employment in this group is office employment, although there is a substantial amount of business service employment which is found south of Howard Street where industrial-type space is available. Miscellaneous service employment (architectural, accounting, etc.) tends to locate near employment in FIRE, but is less concentrated.

- Locational trends in FIRE and the related services indicated are clear. Most new employment is being accommodated in more intensive office development within the financial district and by new and much more intensive development in the Golden Gateway, Northern Waterfront, and eastern South of Market areas where warehousing, manufacturing, and wholesaling were once more prominent. The result has been dramatic increases in employment density in these areas.

Future growth in these sectors, the most rapidly growing parts of San Francisco's economy, is expected to occur chiefly in the same areas.

e. Health and Medical Services

- This service industry accounts for rapidly expanding employment in the city, particularly at private hospitals. There has also been expansion of employment in government medical facilities. By 1972, 55% of total private medical employment was at hospitals, so that almost 80% of the net increase in medical employment since 1965 was associated with hospitals.

- The above trend has resulted in higher employment in those areas where the major hospitals are situated, chiefly the Western Addition-Inner Richmond corridor. Employment in doctors' offices has increased in the same areas. The significant growth in this industry and its location in the primarily residential areas of the city are responsible for a large part of the otherwise unexpected growth in employment in the western two-thirds of the city.

- Future growth of employment in this industry is expected to generate additional gains in employment and construction of new institutional space in these same areas.

f. Retail Trade

- The area east of Van Ness and north of Market Street is estimated to account for more than half of total retail trade employment in the city and to have experienced both an absolute increase in retail employment as well as an increasing share of the city's total since 1965.

- The increasing share of retail employment in the Downtown and Northeast districts is the result of several factors: increased tourism and employment, increasing activity in those retail sectors (such as eating and drinking places) which have higher employment relative to dollar sales than the average for all retail trade, and the effect of declining resident population on neighborhood retailing.

- Although commuters and tourists generate much less retail employment than resident population, those retail sectors which are heavily patronized by tourists and commuters generally appear to have higher employment relative to sales. This fact has helped Downtown maintain a relatively high level of retail employment.

- Future retail trade employment and space demand will depend on combined demand from tourists and new employees as well as on changes in the city's population. Expansion of retail trade employment and retail space in the residential areas will depend almost entirely on resident population. In the short term most new retail space is expected to be built in Downtown and in the Northern Waterfront area as a result of tourist and nonresident employee demand.

g. Hotel and Entertainment Services

- These primarily visitor-related service categories are highly concentrated in the city, chiefly in the traditional hotel-entertainment district west of Union Square and on Nob Hill. An increasing share of new hotel construction is occurring in the Northern Waterfront near Fisherman's Wharf, and there has, of course, been a northerly shift of entertainment services to the Kearny-Broadway and Northern Waterfront areas. These activities are expected to continue to grow in the same general locations because of their dependence on visitor attraction and close relationship to hotel locations.

h. Automobile Services

- Employment in automobile parking, repair services, and other automobile services tends to be relatively dispersed throughout the city since residents account for most of the demand for services.

- An increasing share of employment in this category is, however, due to increases in parking demand, chiefly in the Downtown and South of Market areas. The South of Market area also accounts for a significant share of employment in auto repair services and is likely to continue to do so as a result of combined resident and nonresident demand.

i. Other Services

- Personal, repair, and other services tend to be dispersed throughout the city in neighborhood commercial areas serving residents. Changes in employment will depend on population changes in the city. Educational services, like medical services, involve employment associated primarily with educational institutions.

- Some of the largest private institutions are located in the Inner Richmond-Western Addition corridor, where high employment in medical services is also found. Projected increases in employment in educational services are therefore likely to result in institutional expansion in the same general areas. There is also a large component of educational services employment in the Downtown and South of Market areas, resulting from the more central location of technical schools, some large graduate schools, and specialized schools.

5. The Desirability and Feasibility of Public Intervention to Alter Employment Trends

a. Problem and Potential Industries

- The two sectors in which significant employment declines are expected are manufacturing and wholesale trade. Manufacturing employment might decline by as many as 11,000 jobs by 1985 and an additional 4000 by the year 2000 under the low employment projections. Wholesale trade might decline by 9000 jobs by 1985 and by a total of about 11,500 by the end of the century under the same scenario. The high projections show a much smaller rate of decline, with a possibility of an overall gain in manufacturing of about 2000 jobs by 1985. The low and high projections represent scenarios which do not have equal probabilities. In manufacturing the low projections represent a much more probable scenario than that represented by the high projections.

- For analytical purposes manufacturing industries are divided into three major categories according to their future potential and competitive position in the city. The first category includes "irreversible decline industries" such as food, fabricated metal products, and machinery industries. The second category includes small industries with potential which might be stimulated. In the third category are those industries with an uncertain future: this category includes most manufacturing in the city.

- In order to narrow the scope of testing the feasibility and desirability of public action, several manufacturing industries have been chosen for detailed analysis on the basis of their current significance or possible future growth. The group with current significance includes those with the largest share of present employment in manufacturing -- i.e., food, apparel, printing and publishing, and fabricated metal products. These four industries account for more than 70% of total manufacturing employment, excluding administrative and auxiliary activities.

- The largest industry in the irreversible decline category is the food industry, in which employment will probably decline from 1500-2500 jobs during the next 25 years. The second largest industry in this category is fabricated metal products, in which an employment decline of 500-2000 jobs is expected by the year 2000. Employment in electrical and nonelectrical machinery combined will probably decline from 1200-2200 jobs during the period.

- In the growing industries, our analysis shows only two such industry groups: rubber and plastic products and instruments and related products. Gains are projected to be quite modest in absolute number, ranging from 400-650 new jobs by 2000.

- Uncertain future industries are those for which the low projections show a decline while the high projections show employment gains. In 1973, industries in this category accounted for more than 60% of manufacturing employment, excluding administrative and auxiliary activities. The high share of manufacturing employment in these industries is a major reason for the wide range between our high and low projections of manufacturing employment.

- The category includes the two largest manufacturing industries in San Francisco: apparel and printing and publishing. The range between high and low projections for 2000 is 2500 jobs (8000-10,500) for the apparel industry, and 1000 jobs (9500-10,500) for printing and publishing. The future of these industries in San Francisco is, therefore, of primary importance in terms of the level of future employment in manufacturing.

b. Potential Impact Characteristics of Target Industries and the Desirability of Trend Alteration

- Though the decline in employment will reduce total spending of manufacturing employees in the city, the resulting indirect employment impact on city residents will be minor if the decline occurs gradually over time. There are two reasons for this. First, the total reduction in employee expenditures will be much smaller than the expected decline in disposable income received by manufacturing employees since (1) most manufacturing employees' income is received by nonresidents who spend only a fraction of that income in the city, and (2) most city residents losing their jobs will find other jobs in the city.

Second, overall employment in the city is expected to increase at a significantly higher rate than the city's labor force which might actually continue to decline, thus offsetting the multiplier effects of the projected decline in manufacturing employees' expenditures. Though long-term multiplier effects are expected to be quite limited if not negligible, the short-run effects might be significant. The out-migration of several large establishments from the same area will, for example, have a considerable impact on ancillary activities in the neighborhood. Such impacts depend, however, more on area relocation and growth than on the overall decline in manufacturing. In these cases, the impact will be on land use rather than on employment.

- The projected decline in manufacturing and wholesaling employment will affect city residents' income through (1) the net employment impact, i.e., loss of jobs held by city residents which is not offset by growing employment opportunities elsewhere, (2) income differentials between the lost jobs and the new jobs obtained in the growing sectors, (3) loss of income to proprietors of establishments serving employees in these sectors, and (4) loss of income to proprietors of wholesale and manufacturing establishments who suffer declines in business.

- Though most residents losing their jobs in manufacturing and wholesaling are expected to find other jobs in the city, their new jobs are likely to pay less. The loss due to sectorial wage and salary differentials is estimated to range between \$1.2-1.8 million (\$1973) in the year 2000 for manufacturing and between \$1.8-2.4 million (\$1973) in wholesaling.

- The fiscal impacts of the projected declines in manufacturing and wholesale activities are determined by a variety of direct and indirect effects. The major direct effects include the loss of tax revenues collected from manufacturing and wholesale establishments. The indirect effects include the loss of revenues resulting from the adverse employment and income effects -- e.g., the possible out-migration of some city employees whose jobs are eliminated and the loss of income for other businesses serving employees in these sectors, changes in the demand for city services, etc.

- Based on our average employment projections and estimated 1973 wages, the annual decline in payrolls will range between \$78-83 million (\$1973) in the year 2000 for manufacturing and between \$91-96 million (\$1973) in wholesale trade. Assuming that all establishments in these sectors would pay a 1% payroll expense tax, that would mean a decline of payroll tax revenues ranging between \$780,000-830,000 (\$1973) from manufacturing and a decline ranging between \$910,000-960,000 (\$1973) from wholesale trade in the year 2000.

c. Methods of Intervention to Alter Trends and the Feasibility of Trend Alteration

- The types of problems concerning industrial location and viability for which cities might use intervention tools can be separated into three groups: attractive, preventive, and corrective. Attractive tools are those which can be used to attract new economic enterprises to a given city. Various forms of financial subsidies which include tax concessions, municipal bonds, land write-downs, and similar programs are used almost exclusively in an attractive situation.

- Preventive tools are used to prevent the occurrence of problems which could lead to relocation or economic failure of existing industries. The types of tools which can be used in preventive situations include programs which facilitate the expansion of existing industry, programs which protect industrial zones from encroachment by other land uses, and those which maintain a high quality of city services.

- The final class of problems and tools is corrective. Examples of tools which may be used at the corrective level include increased crime prevention efforts in areas of high crime, rezoning industrial areas in an effort to eliminate the encroachment upon these areas by incompatible or competing land uses, improvements in public transportation and parking so that industry workers will be able to reach the location, and improvement of inferior neighborhood conditions.

- In addition to being classified as attractive, preventive, or corrective, intervention techniques can also be grouped by the types of actions associated with them. Some transfer public monies to private industry whereas others benefit industry by spending public monies for public services which the industry uses. Still other tools are basically legislative in nature, such as changing of zoning laws and building codes. Nine broad categories of intervention tools have been used by cities across the country. They are: tax concession, municipal bonds, other financial subsidies, public services improvement, infrastructure improvement and development, zoning, legislative action, enhancement of business climate, and intergovernmental policies.

- It is important to note at the outset that many factors which affect or change the San Francisco economy are not susceptible, or easily susceptible, to manipulation by any available and acceptable public actions. These factors can generally be grouped into three sets: those over which the city is not likely to have any influence regardless of cost; those which could be influenced at some cost; and those which might be influenced indirectly by actions which do not directly affect the industry but which are conducive to growth.

- o Analysis of tools available to the city and of the factors susceptible to influence indicates quite clearly that most of the factors over which the city could have an influence, irrespective of cost, are those which are least important in industrial decision making.

- Within the category of factors which can be influenced, the two which might be most important for manufacturers -- access to highly skilled labor and favorable tax structure -- would be the most costly to change. Our analysis suggests that the most significant impact on employment might be accomplished by influencing the demand for goods and services in the city. However, in this case, the influence would be principally on employment in retail trade and services and to a lower degree wholesale trade, not on manufacturing.

6. Strategies and Recommendations for the Major Industrial and Commercial Districts

a. Northeast District

- The Issues

The city's Northern Waterfront Plan calls for phasing out nonmaritime industrial use in the Northern Waterfront area. Projected changes in employment and space use indicate that expanded demand for office, retail,

hotel, and parking space will, in fact, probably accelerate a reduction in industrial activities still remaining in that area.

Displacement of existing manufacturers in the area is most likely to result in the relocation of some outside of the city, rather than in the China Basin or other southern industrial districts, as called for by the Northern Waterfront Plan. If relocations are to the East Bay, a secondary result may be the loss of clients to the port.

- Alternative Strategies

Two possible strategies are available to the city if it wishes to minimize or retard the loss of manufacturing jobs and possible port business: (1) support of existing manufacturing through containment of the growth of office, hotel, and retail uses, and (2) assistance in relocating existing manufacturing activities to other areas in the city where land or appropriate buildings are available.

- Evaluation

The first strategy would be contrary to existing city policy and would probably, at best, slow the rate of decline in manufacturing employment in the area rather than halt it. Some manufacturing activities will probably be forced to move in any event if the Belt Line Railroad is relocated or removed.

The second alternative, assistance in relocation, can be implemented consistent with current city policy and without limiting expansion of other uses in this area.

In order to enhance the probabilities of in-city relocation, the city could do the following:

- Identify firms likely to be displaced by expanding activity in advance of that occurrence.
- Determine the precise requirements for new space.
- Identify and maintain a running inventory of available building space for lease or sale in the potential receptor areas.
- Institute policies to preserve suitable industrial space.
- Make known the willingness of the city to assist in relocation.
- Offer financial assistance in moving. (As indicated in Chapter V, it is by no means certain that benefits to the city from attempts to preserve manufacturing employment will justify any significant expenditure of funds.)

No major expenditure of funds would be appropriate to provide assistance for relocation of firms from this area. Generally those who would relocate outside the city are not likely to be influenced by payment of moving expenses or even of subsidization of land or building costs. In some cases the port can offer land at reduced rates in the Southern Waterfront area, but prior efforts in this direction have not shown that they will be successful.

- Recommendation

We recommend that the city continue to implement its land use policies contained in the Northern Waterfront Plan. In order to minimize avoidable losses of employment in manufacturing and to utilize suitable available space elsewhere in the city, the city should assist firms having to relocate.

b. Downtown District (North of Market)

- The Issues

Net new demand for office space allocated to this area is estimated to average 400,000 square feet per year until 1985, with the long-term projections ranging from 250,000-340,000 square feet per year. Recent rates of construction have been much higher, resulting in a higher, though tolerable, vacancy rate. Demand prior to 1985 may actually be somewhat higher and gross new construction will exceed net new demand by about 20%, due to losses in the inventory during office development. However, continuation of the current rate of construction could easily result in increasing vacancies in existing buildings. This can in turn cause excessive demolition of existing space in anticipation of new construction and/or a potential short-term "bust" in the office market.

It may well be as important for the city to exercise some control over the rate of new office construction as over its eventual magnitude in particular locations. Under current zoning only a limit on the ultimate amount of space which can be built is imposed; there is no control over the timing of increments to the inventory, given the relatively high capacity afforded by current zoning.

The total theoretical capacity of the C-3-0 zone and the Yerba Buena Center area together is about 37 million square feet of new office space, compared to an estimated maximum demand of 16.3 million square feet from 1973 to the year 2000 in the entire Downtown and South of Market districts. In 1974 an additional 3.3 million square feet of space were brought onto the market in these areas. In 1975 an additional 1.6 million square feet are expected to be added by the Southern Pacific buildings. Construction of Embarcadero No. 3 is expected to add 780,000 square feet in 1976.

Thus, almost 5.7 million square feet are being added in the first three years of the projection period, leaving only ^{13.3}~~12.7~~ million square feet effective demand for gross new office construction for the remaining 24 years. In accordance with our medium-level projections for 1985, there would not be effective, new demand for additional construction in these areas after 1976 until 1985.

In order for Yerba Buena Center land to be marketed for office construction at planned densities, it would have to account for at least 54% of total new demand for office space within the combined Downtown and South of Market areas. Even if actual capacity in the C-3-0 district is only half the theoretical capacity, total capacity of the C-3-0 district plus YBC exceeds the maximum likely demand for new office space in the Downtown and South of Market districts by 70%.

The preceding facts suggest the possible desirability of restraining growth North of Market Street in order to accommodate new growth on land already prepared for development in the YBC project area. This strategy would reduce the necessity for demolition and reconstruction in Downtown, higher vacancy rate in older structures, and would maximize the fiscal benefits derived from construction of new buildings on vacant land.

New parking requirements for Downtown would require (in six-story garages) as much land as new office development. Containment of growth in office development in this area through a change in zoning would reduce parking requirements and therefore land required to be redeveloped for parking and office development. The effect would be to shift new office development and supporting parking to the South of Market area and into the YBC project area. Another alternative means of reducing localized parking demand is to provide remote parking and shuttle transit services, but this would not necessarily have any impact on the location of new office development.

The relatively small demand for net new retail space indicates that only moderate amounts of ground floor space in new office construction is likely to include retail uses.

Attempts to diffuse retail space throughout the office core, other than for directly related business and personal service, could occur at the expense of the retail district and reduce the overall potential of downtown retailing. However, an increase in the number of downtown residents would have a significant impact on the demand for downtown retail space. In addition, tourists -- particularly convention-goers and vacationers -- spend about six times the amount spent by office employees on retail goods and services, other than spending at restaurants and bars. Thus, the location of hotels in or near the office development core, such as the recent construction of the Hyatt Regency Hotel in the financial and administrative district, may expand the demand for nearby retail space.

Without controls, parking lots are likely to occur as interim uses, remaining in such use for a considerable time if office development slows. Demolition of buildings replaced only by parking lots can result in loss of property tax revenue to the city and reduction in available space needed at lower rentals for uses such as apparel manufacturing, printing, and some professional services. The city may wish to ensure that whatever parking demand is met in the area is met at the highest densities possible.

The Department of City Planning has recently approved and sent to the Board of Supervisors a proposed ordinance to control parking lots in the Downtown and South of Market areas. Permanent controls may be needed to prevent proliferation of parking lots, to discourage premature building demolition, and to reduce overall amounts of parking provided in the Downtown area. Some of the office demand projected to be satisfied outside the Downtown district could probably be accommodated in older, lower-rent buildings within it if they are retained. There is no evidence, however, that constraints of new parking in Downtown will, in themselves, reduce demand for new office space.

- Alternative Strategies

If the compact and high-intensity office core area is desired, development potential should be lowered outside this area. If Yerba Buena Center is to become a major office center, then some reduction in allowable development in or the size of the C-3-0 district would be appropriate. If more control over the rate of growth is desired, overall development potential should be reduced and channeled.

It may be desirable, in order to encourage new retail space at ground floor level throughout the office core and to increase retail trade employment, to encourage the development of additional residential uses and hotels in the office core.

- Evaluation

Downtown San Francisco's comparative advantage as a location for the FIRE and business services sectors is sufficiently great that a considerable amount of latitude is present in channeling and controlling such growth. It is very unlikely that constraints on growth in a particular part of San Francisco's business center would result in actual losses of potential employment in those sectors, so long as there was room for accommodation within adjacent areas served by public transit. Given the commitment of the city to Yerba Buena Center and the availability of land for development there, as well as the Golden Gateway project area, it would be desirable to constrain development in other areas unless the future use of YBC land is to change.

Successful marketing of new housing in Downtown could lead to demand for a much larger increase in retail use than is projected and, of course, to additional employment in retailing. Prospects for downtown retailing are not particularly good unless there is a relatively high rate of growth in new downtown employment and tourism or an increase in the population of the city, particularly downtown population.

- Recommendations

The city should maintain its current policy of encouraging retail uses to concentrate within the retail district.

Further attention should be given to the possibility of increased residential development in the Downtown area, in order to support retail trade and retail trade employment, in both the retail core and in proximate business concentrations.

Since substantial increases in downtown traffic congestion could be inimical to realization of the area's full potential for retailing, continuation of controls over commuter parking will prove to be necessary.

c. South of Market

● The Issues

This district provides the most favorable conditions of any district to continuance of manufacturing, wholesaling, and warehousing activities which have a natural inclination to remain in San Francisco. The area is particularly attractive to small firms and these are most likely to remain and survive in the city if space is available. Elimination or severe reductions in the inventory of older industrial space in this area (estimated at 8-10 million square feet) is very likely to accelerate declines in employment in manufacturing and reduce the city's potential for attraction of new, small firms in the few manufacturing sectors with potential for expansion. Thus, office development in the South of Market area can conflict with maintenance of feasible manufacturing, wholesaling, and warehousing activities in the city.

Ultimately, the expected decline of some key sectors -- particularly food processing -- is expected to make available land for other use. Anticipated new office growth is expected to occur chiefly to the east of Third Street, from Market to Folsom, and along the Market-Mission corridor from Third to Eleventh. Office development east of Third will ultimately force relocation of some large apparel manufacturers.

New parking demand generated by growth in office employment can, if not satisfied on relatively little land in multi-story garages, exert pressure for the removal of small-scale industrial space from Mission Street to Brannan, thereby having the same effect on the industrial space inventory as new office construction. Parking demand can increase to the point where profits from parking use exceed those obtained from building rentals.

If displacement of existing manufacturing activities is to be minimized, channeling of new development into existing available land and reduction of land required to accommodate parking demand will be required.

There appears to be a surplus of scattered retail space in this district at present, despite a potential demand for more concentrated space. The Market-Mission corridor, particularly centered around Fifth Street, has increasing potential for retail use, while demand is expected to decline in the more southerly areas. As in Downtown, concentration of new retail development near the BART-Muni stations and in a southerly extension of the North of Market retail district is expected to make for

more viable retailing. Most of the projected new demand for retail space will probably be absorbed in the Yerba Buena Center, in connection with new tourist activity.

The marketability of land in YBC is likely to proceed much more slowly than planned, unless potential for new development is reduced North of Market and east of Third Street. The lower land prices are likely to be most attractive for office activities which can locate farther from the office core without any disadvantage to their operations, such as data centers and utility and communications buildings. Based on current zoning and projected demand, it appears that full development of land in YBC allocated to offices might not occur until the year 2000.

- Alternative Strategies

If the city is to enhance its attractiveness to continued manufacturing and thereby retard the decline in overall employment in manufacturing, maintenance of South of Market's inventory of industrial space will be critical. A strategy of support for existing land uses (that is, buildings and uses in general, not necessarily specific firms or industries) will be required in order to permit continuing industrial use.

Another alternative strategy is to attempt to relocate existing industrial activities from areas under pressure for new development to those experiencing far less pressure, relocating them either into other areas or within the district. For some activities, such as printing and apparel manufacturing, relocation within the area or into the Mission and Potrero districts may be possible. Some machinery and metal products operations may also be accommodated in these areas.

The prospective slow marketing of land in YBC suggests a possible strategy of using land planned for office development for other purposes, possibly residential development. (One possible use, previously deleted, the sports arena may be reintroduced.) Increased residential development in this area could expand employment in retail trade and personal services and increase tax revenues if the land could be marketed rapidly for such purposes.

- Evaluation

Due to the lack of large quantities of similar industrial building space available in other districts, relocation to other areas is not likely to be effective with respect to many small firms and industrial activities which choose to locate in South of Market. Similar space is available only in small parts of the Mission, Potrero, and Northern Bayshore areas. Since few activities located in South of Market can afford the cost of new space, they would have to be accommodated in existing buildings.

Given the amount of land available for new office development and the possibility of meeting parking demand at high floor area ratios, there is every reason to believe that South of Market's useful inventory of industrial space can be preserved without restraining growth of office employment.

Changes in zoning would be required to prevent encroachment of new office development into the more southerly areas of the district, zoned C-3-S and M-1, where low land prices encourage some new development (particularly utilities and government buildings).

Parking demand poses a threat to continued industrial use, and increasing congestion levels could reduce the efficiency of wholesaling and manufacturing activities in the area. Therefore a continuation of the proposed interim parking log controls on a permanent basis may be necessary, joined with increased encouragement of multi-level parking garages on land now in parking lot use or vacant. The alternative is to provide remote parking and shuttle services or to attempt a substantial increase in transit usage.

- Recommendations

The Department of City Planning should give serious consideration to prevention of office development in the C-3-S and M-1 districts. Lowering permissible floor area ratios in the C-3-0 district should also be evaluated with a view toward accommodating expected office development through 1985 in the YBC project area.

The appropriate agencies should consider the advisability and possibility of accommodating new residential development, along with new office development, in the YBC project area, both to enhance downtown retail trade employment and to market land more rapidly.

The city should encourage satisfaction of parking demand intended to be satisfied in South of Market, in commercial multi-story garages, and should evaluate the financial feasibility of public construction of new garages for long-term as well as short-term parking use, should adequate incentives for commercial operation be lacking.

d. Potrero District

- The Issues

A large amount of land in open-air use is found in this area and building vacancies are relatively high. A continuing increase in vacancies in manufacturing and warehousing space is likely, although there is potential demand for new modern warehouse space for wholesalers serving downtown business or receiving or shipping goods through the port. The future of the area is very uncertain based on existing trends; the mixed character of uses in the area may prove to be disadvantageous to expansion of manufacturing or trucking and warehousing on the one hand, while its proximity to Downtown and the availability of large amounts of under-utilized land may make possible new development for warehousing. Occupancy of some abandoned industrial space by firms relocating from South of Market or the Mission districts is possible, depending on city policies with respect to those areas.

- Alternative Strategies

Given the relative and prospective underutilization of land and buildings in this area, one possible strategy would focus on ^{reuse} reuse of land and buildings for industrial or nonindustrial use. This strategy could consist of several alternative types of action: clearance and redevelopment for new construction for either industrial or nonindustrial purposes or both, building maintenance and rehabilitation for industrial uses or office uses, or development of parking related to downtown employment.

The other alternative is to attempt to maintain the nature of land uses currently in the area by making some environmental improvements, seeking new users for existing vacant buildings, or simply leaving the area alone. Available buildings in the area could provide for industries tending to locate in the Mission, such as truck and auto rental yards, laundry and dry-cleaning plants, and machinery shops, if these uses are forced to relocate.

- Evaluation

Strategies applicable to this area must be evaluated in part relative to programs which might be undertaken in other areas. If severe losses in the industrial space inventory occur in the South of Market, maintenance of appropriate buildings in this area may be important in terms of retention of small firms although the area is less suitable to their needs than South of Market. If housing development is encouraged in the Mission, this area offers some potential as a receptor area, at least for the smaller firms, and possibly even for major apparel manufacturers. On the other hand, this area stands the chance of being abandoned as a manufacturing center. The continued presence of specialized buildings attracting no new demand detracts from possible new uses for the land, such as trucking and warehousing. The presence of residential uses in part of the area is not compatible with the nature of existing industrial activities.

Limited redevelopment actions might be undertaken to make available land for new housing, particularly in the northern section around China Basin Channel. Given existing land occupancy in the area around the Southern Pacific rail yards, redevelopment confined to this area would cause little disruption of existing manufacturing or warehousing uses. However, if extended southward along and west of Third Street, many manufacturing and wholesaling activities would be displaced and the risks of accelerated decline in employment in these sectors would be high. If forced to relocate, there is a good chance that firms would leave the city, with a resultant overall decline in employment since possible new uses -- trucking and warehousing -- have lower levels of employment density.

A "minimum effort" would involve minor improvements in the industrial environment, possible relocation or abandonment of rail rights-of-way, and some street improvements. A hands-off approach would, in essence, involve gradual decline of industry in the area, as projected, without major adverse effects on existing occupants or employment. As land becomes available through gradual decline in manufacturing and wholesaling activities, public use may be appropriate. But public action should be a result, rather than a cause, of industrial decisions.

- Recommendations

No major redevelopment activity should be undertaken in this area; any redevelopment should be limited to areas which do not currently house a high amount of manufacturing employment, chiefly the northern section near China Basin Channel, and should be assessed in terms of potential for non-manufacturing uses. The risks of dislocation of existing employment in more southerly areas is higher than the probability of increased employment through new development. Demolition of buildings susceptible to continued industrial use should be avoided. This will require a small area or building-specific approach to any redevelopment action needed to accommodate new uses, such as public or residential use.

The area south of 16th Street should be maintained over the short term as a potential receptor area for industries which may relocate from the Mission or South of Market into existing buildings. Programs should be developed to encourage or require the demolition of specialized buildings which cannot be used for other purposes in order to encourage new trucking and warehousing development.

The southerly portion of this district, near Army Street and the new port facilities, has the highest potential for new wholesaling, warehousing, and trucking facilities. Efforts to accommodate such uses should be focused here, particularly since this area is not attractive for residential, office, or institutional use.

Although the area east of Third Street has potential for port-related warehousing and wholesaling uses, demand for such uses will depend entirely on the future health of the port and the development of any new port facilities in the Central Basin area. The crucial public decision which must be explicitly stated in this regard is the city's future commitment to maintaining at least the current level of maintenance activity in the area. Since there is no other industrial demand in this area, the most appropriate approach is to avoid actions which could force out existing firms. If new users cannot be found for buildings such as the American Can building, removal of such buildings should probably be encouraged to allow for expansion of trucking facilities and storage. Only a major, successful expansion affecting the Port would result in a port oriented service on the part of such transportation sectors.

Some consideration should also be given to the possibility of using vacant and underutilized land in the China Basin Channel area for institutions -- especially educational and medical institutions.

e. Inner Mission (East of South Van Ness)

- The Issues

The Mission could continue to attract firms relocating from other areas. Apart from the South of Market area, this area, because of the kind of space available, is most likely to attract small firms displaced from other areas or entering the market. However, reuse of abandoned food plants is not likely and these occupy a substantial ground area. New construction to accommodate industry should not be anticipated.

Proposals have been made recently to phase out industrial use in parts of the Inner Mission in order to accommodate new residential development. This could involve both the scattered and fairly limited industrial use south of 20th Street and the more extensive, predominantly industrial area north of 20th. The question is whether or not this can be accomplished without actually causing a loss in employment in manufacturing, wholesaling, and related uses.

- Alternative Strategies

Several options are possible in this area. First, continued use of existing industrial buildings (except specialized food and metal product plants) could be encouraged by maintaining the inventory and encouraging the continued industrial character of the area. This strategy would help to retain employment in industries which are forced to relocate from other areas, particularly the South of Market area, and to provide space for new, small firms engaged in a variety of loft-type activities. Whether such a strategy is important in terms of the city's economy will depend to some extent on the future of South of Market.

A second strategy would involve reuse of land, and possibly buildings, likely to be abandoned for industrial use by existing firms for residential and related uses, converting this area or parts of it from industrial to residential and institutional use. A third strategy related to the second is to attempt to relocate firms now in the area to other industrial areas in order to make possible this conversion.

- Evaluation

On the assumption that residential development is both desirable and feasible, no rapid and wholesale conversion (e.g., as in a large-scale redevelopment) is possible without an almost certain loss of jobs in manufacturing and wholesaling. Although employment in these activities will almost certainly decline in any event, forced relocation would accelerate the rate of decline. On the other hand, if industrial space available and to become available in the South of Market, Potrero, and Northern Bayshore districts is retained, space in the Mission is not likely to be required to accommodate new firms' demand, or for relocation of firms displaced from other areas.

Conversion of the area could best be accomplished by a gradual and selective process of redevelopment and phasing out of industrial use. Small firms can be more successfully relocated than large manufacturers although assistance should be provided to ensure that job loss is minimized. Focus of attention for conversion should be on reuse of land which becomes available due to the out-migration of the large food processors or other firms using large plants on large parcels. Open-air uses which are not compatible with residential use, such as concrete plants and truck terminals, can probably be successfully relocated within the city to other areas, particularly the Potrero and Northern Bayshore districts, since the investment in plant is less than in the more specialized and larger plants.

If conversion to residential use is not desired or is not feasible, the area north of Mission Street appears to be a viable one for continued industrial and warehousing use, as well as institutional and business services uses. The closing of breweries and of other food processing plants, however, is likely. This will make available land (if buildings are removed) which has potential for new warehousing and business services. Failure to remove abandoned buildings, however, could have a detrimental effect on the environment of the area for new industrial users, as well as preventing new uses for the land.

- Recommendations

To the extent possible, buildings which have generalized space usable by small firms should be retained as long as possible, consistent with new residential development. Gradually, the city should attempt to provide for the relocation of remaining firms in the area to the Potrero and Northern Bayshore areas when space becomes available, and should discourage new industrial development if it is inconsistent with new residential development. Given the accessibility of this area to retail stores and personal services, compared to the other industrial areas, the potential for incremental residential use would appear to be much greater than in the Potrero or Bayshore industrial areas.

f. Northern Bayshore District

- The Issues

Manufacturing employment has declined severely in this area. The decline will continue, resulting in even higher vacancies in large, old plants (particularly in the metal products industry) for which there is no new demand. The impact is likely to be felt chiefly near Army Street, whereas the Apparel City-Produce Market area seems to attract new firms when others move out. A great deal of vacant land is available in the India Basin Redevelopment Project and environs.

- Alternative Strategies

Given the relative health of the Apparel City and Islais Creek areas, one relevant strategy is to support existing industrial use in the area and to avoid actions detrimental to continuation of existing firms as long as possible. A strategy of support would include several components:

- Some physical improvements in street condition, layout, and access;
- Ensuring that "messy" open-air uses, such as auto dismantling and contractors' storage, are controlled to prevent nuisance effects on other uses;
- Planning public uses to avoid dislocation of plants housing activities which are likely to leave the city if forced to relocate; and
- Assuring that vacant buildings do not fall into serious disrepair or cause a blighting effect on the area.

A second relevant strategy involves reuse of land which is now vacant and land which is likely to become vacant for uses for which there is a demand. This is one of the few areas in the city -- particularly near India Basin and Piers 94 and 96 -- where new warehousing can be attracted to the city. Attraction of new warehousing depends in part on the availability of relatively low-priced land. The India Basin Redevelopment Project offers relatively cheap land. As industrial users vacate existing space along Army Street and Islais Creek, limited redevelopment may be justified for warehousing. The amount of new warehouse space that can be marketed will depend in part on the effort of the port with regard to future client solicitation and provision of storage space for its clients on piers and port land.

- Evaluation

Although long-term prospects for manufacturing are not good, this industrial district could retain its general attractiveness to a variety of industrial uses. Some relatively minor public actions, at no major cost, could substantially improve the environment of parts of the area for industrial use, possibly slowing out-migrations or encouraging new developments and investments. In particular, street conditions, lighting, and policing need to be improved in the Islais Creek area to improve access, eliminate localized flooding, and enhance security for warehouses and wholesalers. Efforts also need to be made to monitor and assure compliance with environmental standards by open-air uses and to minimize dirt and waste material generated on streets in the area from movement of materials to and from the salvage, storage, and auto wrecking yards.

The area near the new port facilities offers the best potential for accommodation of potential demand for new wholesaling and warehousing uses, including ancillary offices. Without the provision of land at reasonable prices, this potential demand will not be realized in San Francisco, resulting in foregone tax revenues and continued high vacancies of land zoned for industrial purposes. The attraction of new major manufacturing uses, on the other hand, in newly constructed space, is highly improbable and the area is not well located for business services requiring proximity to downtown business and/or transit access.

- Recommendations

The planning department should provide for improvements to the street network in the area in its Capital Improvement Program, concentrating first on improvements around Islais Creek Channel where paved streets are presently nonexistent or in poor condition. The Redevelopment Agency should evaluate the market for new warehouse space in India Basin. If, as expected, land can be marketed for warehouse space, it should be unless definite offers are made for more employment intensive use.

Need for land for expanded public uses should be met to the extent possible on parcels of land which are already vacant or in open-air uses. Redevelopment or public acquisition of land which would force industrial relocation should be avoided. The possibility of acquiring sites abandoned by large manufacturers and reselling them, after clearance, for new warehousing should be explored further in terms of its financial feasibility, on a case-by-case basis.

- g. Southern Bayshore

- The Issues

The part of this area east of James Lick Freeway and south of Third Street (South Basin) has very limited, if any, potential for new industrial uses, even warehousing uses. Generally, access is less direct and more in conflict with residential, commercial, and commuter traffic than in the area west of the freeway or in the Northern Bayshore area. Although a redevelopment project for industrial use might attract new warehousing uses, manufacturing use is less likely. As a result, more employment could be lost from displacement of existing activities than would be gained from redevelopment.

- Alternative Strategies

Support of existing industrial uses in the South Basin area would probably require, at minimum, a major improvement in access. Reuse for industrial purposes through redevelopment and rebuilding is one possible strategy, as suggested in the South Bayshore Plan. However, projections of employment and land requirements indicate that no demand exists for land in this area apart from warehouse use. Nearby South San Francisco offers lower taxes and better highway, rail, and airport access.

Another alternative is to convert land now used for industrial purposes in the South Basin area to residential, commercial, and institutional uses. To avoid acceleration of employment declines, this would have to occur gradually, making use of vacant land first. The latter is available chiefly near the bay.

Lastly, open land and land in storage uses could provide remote parking for downtown commuters, possibly in multi-story garages also serving Candlestick Park.

- Evaluation

With respect to the South Basin-Candlestick Cove area, future declines in industrial employment and use are very likely, resulting in land potentially available for other use. The most likely use is non-industrial.

- Recommendations

Redevelopment action in the South Basin-Candlestick Cove area which would force out existing firms should be avoided to prevent premature employment losses. If feasible, new residential development should be encouraged close to the new shoreline park on land now vacant or in open-air uses, to minimize losses of existing industries. Existing open-air uses can probably be relocated into the Northern Bayshore area.

The city should experiment, as planned, with remote parking, first on open land and, if successful, then possibly in garages.

h. General Strategies Outside the Major Commercial and Industrial Districts

- The Issues

A reasonably high proportion (30-40%) of projected employment gains in the city is expected to be accommodated outside the city's eastern commercial and industrial belt, if past trends continue. Much of this employment is accounted for by projected increases in medical and educational services and in government.

Retail space demand will increase chiefly in those areas experiencing increased housing construction and in specialized commercial areas. These areas are generally highly developed so that retail demand may also conflict with residential demand. Since the market value of land or building space for retail, office, or institutional purposes is usually higher than for residential use, these uses can out-bid residential use.

- Alternative Strategies

One strategy which could ease future conflicts caused by expanding office and institutional demand in the residential areas would be to use land coming vacant in the eastern industrial areas for institutional purposes, such as health facilities and educational institutions. Similarly, auto repair and

other automobile service activities, which have characteristics of space occupancy more similar to those of light industry than of residential or office uses, could be relocated or encouraged to locate where land is available.

Another strategy, relevant to retail space demand, is to continue to try to maintain compact, neighborhood commercial areas which tend to be more vital than scattered strip commercial activity. However, to avoid land use conflicts between well balanced residential and commercial use, it may be desirable to limit the amount of growth in the proximate neighborhood commercial areas and divert growth to other commercial areas more appropriate for expansion.

- Evaluation

Relocation of existing institutions is unlikely to be feasible given the large commitments to facilities already in place. However, further study would be warranted regarding the feasibility of accommodating new growth in medical and educational services in the Potrero district and possibly along Third Street in the Northern Bayshore district where adequate land is available. This would require improved transit service and a public commitment to environmental improvements, but may be possible.

In addition, a substantial degree of influence over land use trends related to government employment can be directly affected by the city in decisions regarding the location of new city offices, storage facilities, and shops. Location of such facilities by the city, as well as by the state and federal governments, in areas where land would otherwise be vacant, would be more desirable in fiscal terms than acquisition of land which would otherwise be in private use.

Maintenance of compact neighborhood commercial areas is important for the survival and health of neighborhood retailing in the city. Associated parking requirements, particularly in those areas attracting city-wide customers, are large, however, and not easily accommodated without public assistance. To date there is little evidence that transit will account for a significant amount of travel to and from shopping areas, except Downtown.

- Recommendations

The city should encourage location and expansion of institutional activities, including medical and educational services in the eastern third of the city where space is and will be available. To minimize further encroachment in existing residential neighborhoods limitations upon expansion of such institutional use through zoning prohibition or constraints should be seriously considered.

Light industrial uses with extensive space requirements such as auto repair and service should also be encouraged to locate in the eastern portion of the city. Encroachment upon existing residential neighborhoods should be curtailed.

The city should evaluate expansion of public parking garages in neighborhood commercial districts to minimize land requirements and maintain the compactness of these areas. Diffusion of retail space and its spillover into residential areas can be avoided by zoning in accordance with evident need for retail space based on area plans.

D. LONG-TERM STRATEGIES AND RECOMMENDATIONS

The evaluation of public policy tools is based on several major interrelated considerations. They are (1) the objectives of public intervention, and (2) the nature of the issues to be addressed by the policy tools under consideration, and the costs and benefits (i.e., social desirability) associated with the application of specific tools or strategies for dealing with the issues.

1. Public Policy Objectives and the Evaluation of Policy Tools

- The major general objectives of the city's public policy are (a) to encourage economic trends which will benefit the city and its residents while discouraging or altering trends having adverse effects on the city's fiscal base and/or on the residents' overall welfare, and (b) to increase the overall stability of the city's economic structure and reduce its susceptibility to serious cyclical fluctuations. The public policy tools which are available to the city in pursuing its objectives include (a) "insignificant cost" policies (e.g., zoning changes, the closing of little-used streets and alleys, etc.), and (b) policy options involving significant public funding (e.g., specialized public services, redevelopment, etc.).

2. Major Issues/Associated Costs and Benefits

- The real issue is not whether the city can arrest the decline or stimulate growth, but rather whether such policies are desirable -- i.e., are the likely benefits significant enough to justify the cost of such policies. Our impact analysis indicated the major employment benefits of preventing the loss of 7600 manufacturing jobs by 2000 to be the preservation of about 1275 blue-collar jobs for city residents. The benefits are clearly significant enough to merit serious consideration. The crucial question is whether the benefits exceed the cost of intervention. The costs, as explained in Chapter V, will be considerable. Insignificant cost policies could slow down the projected rate of decline, but significant cost policy tools will be required to arrest the decline and prevent any job losses.

- The costs of the large-scale investments required to arrest the decline in the manufacturing and wholesaling trade sectors will probably exceed the benefits so generated.

- Since cost-benefit analysis does not justify the application of the policy tools required to arrest the projected declines, it certainly does not justify the level of intervention required to encourage actual growth. The benefits from an increase of 1000 jobs are smaller than those from preventing the loss of 1000 jobs. Second, the cost of generating 1000 new jobs is usually greater than preventing the overall decline of 1000 jobs. This is because of the increasing difficulty of attracting

each successive activity to San Francisco. The costs of increasing overall employment will thus be higher than those of arresting the decline, while the benefits will be lower.

- Though general large-scale programs which involve major investments are not desirable, the city should (a) undertake all low-cost measures to slow down the rate of employment declines and (b) review any possible exceptions on a case-by-case basis. One such exception is the apparel industry. The impact on city residents of a decline in employment in the apparel industry will be much higher than an equivalent decline in any other industry. This is due to the high percentage of city residents employed in the industry, most of whom would have great difficulties obtaining other jobs.

- Because of the limited amount of resources available to the city, it should endeavor to concentrate on using tools on a case-by-case basis, where they are designed to relieve the problems facing a specific business or group of businesses. The use of these tools should be concentrated on those industries which have not already decided to leave San Francisco for reasons other than those which can be addressed by the tools.

- Several considerations which are currently affecting specific relocation decisions and which can be affected by city action are responsiveness to requests for specific city services, security of employees and property, parking and adequate public transportation, expansion needs, encroachment of incompatible land uses, and lack of available land for new developments (for detailed analysis see Chapter V). Because of the lack of information, the "success" rate of any of the tools used to correct these problems cannot be predicted. We suggest the city concentrate on these problems because it appears that it can be more successful by trying to correct them as opposed to any others which it can affect.

- According to our average employment projections, the FIRE sector is expected to grow by 37,300 additional jobs between 1973 and 2000. Growth in the FIRE sector will provide most of its additional jobs for those occupation categories ^{relevant to} in the resident labor force.

- In terms of future land use and resident employment requirements, it would be risky to adopt any intervention strategy which would inhibit the growth of those sectors in which the city has its major comparative and competitive advantages -- i.e., the FIRE and service sectors. The emphasis here is on physical growth restrictions or policies which will have a very large cost impact on these sectors. The mere imposition of an additional moderate tax, if it were legal, would have only minor effects on growth due to the significant competitive advantage of these sectors in San Francisco.

- Strategies should be developed addressing the following: (a) the most effective method for reducing the relatively high unemployment rate of resident population, and (b) use of policy tools which could be effective in reducing the negative impact of in-commuters (traffic congestion, etc.).

- Though we have recommended that the city adopt low-cost policies to lower the rate of decline of manufacturing and wholesale trade in the city, we have also shown that merely increasing the number of jobs available in these sectors will have only a very limited impact on reducing the unemployment rate of residents. The solution lies in treating the socio-economic causes of resident unemployment rather than investing in policies which will benefit primarily out-of-city residents. It is most unlikely that the city itself, with the limited resources and intervention tools available, can solve this problem. An additional study should be undertaken focusing on this crucial issue.

- One of the "solutions" to in-commutation is to introduce a wage or income tax, the revenues of which will be used to improve services to residents and to offset a property tax reduction. Proper planning can produce a negligible net tax effect on city residents while improving services. This would increase the city's attraction of residents who may then increase the city's tax base. Such a tax will require a legislative change in the state's Constitution.

II. SAN FRANCISCO'S ECONOMIC ROLE AND FUTURE

A. INTRODUCTION

This chapter deals with the economic structure of the City of San Francisco, the factors which determine the level of economic activity of the various industries comprising the city's economy, and future employment trends by major industry group and major occupational category. The analysis presented has both "direct" and "indirect" objectives.

The direct objective is to inform the policy maker of the probable future changes in the city's economic structure, and to point out that present conditions such as land use, traffic congestion, employment opportunities, etc., are all susceptible to the resulting impacts.

The indirect objective of the analysis is to provide the basic framework and information required for (1) analyzing existing and projected land use trends in the city by estimating the major socioeconomic and land use impacts of the projected trends on city residents, and (2) evaluating the desirability and feasibility of public intervention to alter trends.

Section B includes a summary of current and past employment trends in the city and compares the city's economic structure with that of the rest of the metropolitan area, the state, the nation, and selected urban centers.

Section C presents a comparative analysis of the city as a location for various sectors and industries. This analysis centers on the factors determining the level of activity of each of these sectors and industries.

Section D presents ADL's projections of future employment by industry which are then translated, in Section E, into employment projections by major occupational categories. Section E also includes an overall analysis of the factors which determine the employment impacts of the projected trends.

B. CURRENT AND PAST TRENDS IN EMPLOYMENT

1. Categories of Economic Activities

The economic activities of any region (or city) can be divided into three broad categories: population support, direct export, and indirect export. Population support includes all the activities which are directly related to the region's residents' demand for goods and services. They include retail stores, residential bank branches, legal and health services, schools, fire and police protection, etc. The second category includes activities which are supplied in response to out-of-the-region (or city) demand. They may be agricultural, manufacturing, financial, or tourist activities depending on the region's competitive position in the production of goods and services.

The indirect export activities include services supplied in response to the demand generated by the region's export activities: for example, financial services provided to a manufacturing plant which sells its output in out-of-the-region markets, and manufacturing output (such as commercial printing) supplied to a financial institution which exports its services.

As a general rule, the population support activities tend to be of similar nature in regions of similar population size, composition, and income levels. The larger the region under consideration, the larger the relative share of those activities of total regional economic activities. Taking the United States as a whole, for example, foreign export activities accounted for only about 8% of the Gross National Product (GNP) in 1973. The smaller the region, the less self-contained it would tend to be and hence the share of export activities would increase. Since these activities are determined by regional conditions which are frequently unique to the region under consideration, the economic structures of counties would tend to differ to a larger extent than those of large states, for example.

Intraregional differences, on the other hand, tend to be greater in large than in small areas. Urban centers differ from each other due to size, population density, regional setting, and economic functions. Cities of similar size, densities, and economic functions are generally much more similar to each other, regardless of their geographic location, than to their own surrounding areas. It is, therefore, not surprising that the economic structure of San Francisco differs significantly from that of the rest of the Bay Area, the state, and the nation.

Table II-1 shows the employment composition of San Francisco, the rest of the Bay Area, the state, and the nation. The most outstanding feature of the economic structure of San Francisco is the high ratio between finance, insurance, and real estate (FIRE) employment and manufacturing employment. That ratio in 1972 was 1.3 which was almost 6 times the U.S. employment ratio between the FIRE and manufacturing sectors, about 5 times the ratio for California and the seven Bay Area counties (excluding San Francisco and Santa Clara counties), and more than 10 times the ratio for Santa Clara County.

A comparison of the economic structures of the areas included in Table II-1 shows that the employment share of the trade and services sectors in San Francisco is fairly similar to that of the other areas. The shares of the manufacturing; transportation, communications, and utilities (TCU); and FIRE sectors, on the other hand, are quite different from those of the rest of the Bay Area and the state. The similarity of the trade and service sectors shares is due to the high percentage of the activities in these sectors which are directly related to population support activities and general indirect export activities (e.g., business services as a whole). The dissimilarity in the TCU shares is due to the urban setting, the level of efficiency of public transportation, port-related activities, and San Francisco's function as a communication center.

TABLE II-1

EMPLOYMENT SHARES BY MAJOR INDUSTRIAL SECTORS -
 SAN FRANCISCO, REST OF BAY AREA, AND CALIFORNIA
 JULY 1972

<u>Industrial Sector</u>	<u>San Francisco County</u>	<u>Santa Clara County</u>	<u>Seven Bay Area Counties*</u>	<u>California</u>	<u>United States</u>
Total Civilian Employment	100.0%	100.0%	100.0%	100.0%	100.0%
Nonagricultural Wage and Salary Workers	91.5	89.0	88.2	86.7	87.0
Mineral Extraction	0.1	0.0	0.1	0.2	0.8
Construction	3.4	4.3	4.8	4.0	4.5
Manufacturing	9.8	27.8	14.7	18.5	22.4
Transportation, Communications, and Utilities	10.6	4.1	7.8	5.6	5.4
Trade	17.6	17.6	20.3	19.5	18.8
Finance, Insurance, and Real Estate	13.0	3.5	4.0	4.9	4.8
Services	19.5	17.9	15.0	16.6	15.0
Government	17.6	13.8	21.4	17.4	15.3
Other Nonagricultural Employment	8.5	9.0	10.0	9.6	8.1
Agriculture	0.0	2.0	1.8	3.7	4.9

*Alameda, Contra Costa, Marin, Napa, San Mateo, Solano, and Sonoma.

Source: Arthur D. Little, Inc., estimates based on data provided by State of California Department of Human Resources Development, except U.S. shares which are based on data provided in U.S. Department of Labor, Handbook of Labor Statistics 1974.

Manufacturing activities usually contain a high percentage of regional export activities. In Santa Clara County, for example, more than 70% of total manufacturing employment is accounted for by three virtually "pure export" or indirect export industrial groups: electrical equipment and supplies, nonelectrical machinery, and ordnance. Most of the FIRE sector's employment in San Francisco is generated either directly or indirectly by out-of-the-city demand, while that in the rest of the Bay Area is primarily engaged in population support activities.

The unique structure of the Santa Clara County economy makes any comparisons between it and the San Francisco economy more academic than functional: in other words, the basic factors which determine economic trends in Santa Clara County are quite different from those which affect San Francisco and the other seven Bay Area counties. Our analysis therefore uses the San Francisco-Oakland Standard Metropolitan Statistical Area (SMSA) as the basis for regional comparisons rather than the entire Bay Area, the major difference being Santa Clara County.

2. Economic Composition

Table II-2 presents a comparison between the economic structure of San Francisco, by major industrial sector, and that of the rest of the SMSA, the state, the United States, and selected urban centers. The percentage distribution is based on County Business Patterns (CBP) data which are published annually by the U.S. Department of Commerce.* The data cover nongovernment wage and salary employment excluding railroad employment. CBP publications were used as the primary source of employment data since they are the only source of fairly consistent and continuous data required for area comparisons, and provide detailed employment information for specific activities in San Francisco. A major drawback of CBP data is related to their base, which is the mid-March pay period. Though most nonagricultural sectors are not susceptible to significant seasonal fluctuations, temporary labor disputes, lay-offs, etc., might cause the mid-March period to misrepresent actual annual trends in specific activities. Construction activities are particularly susceptible to significant temporary fluctuations.

Table II-2 illustrates the structural changes in the city's economy between 1962 and 1972 and provides a comparison between the changing San Francisco economy and that of the rest of the SMSA, the state, the nation, and other selected urban centers. The choice of Baltimore, Boston, and St. Louis as cities of comparison was based on (a) their size and population densities, which are relatively similar to those of San Francisco, and (b) the availability of comparable data for these cities.** Philadelphia was included due to its density level which is very similar to that of San Francisco. (See Table II-3.)

*A comparison between County Business Pattern employment data and that of other sources is provided in Appendix A.

**Suffolk County data were used to represent Boston, which does not appear as a separate category in CBP. This is justified by the fact that Boston accounts for more than 87% of Suffolk County's population and more than 82% of the county's land area.

TABLE 11-2

EMPLOYMENT SHARES BY MAJOR INDUSTRIAL SECTORS FOR SAN FRANCISCO AND SELECTED AREAS — 1972 AND 1962

Industry	Year	San Francisco-Oakland SMSA minus San Francisco County							Boston (Suffolk County)*			St. Louis
		San Francisco	San Francisco County	California	United States	Baltimore	(Suffolk County)*	Philadelphia				
Nonagricultural Wage and Salary Workers (minus mining and government sectors)	1972	100.00%**	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	1962	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Construction	1972	5.61	7.24	5.77	5.99	5.62	4.41	4.08	3.53	3.54	3.53	3.53
	1962	5.51	9.23	7.04	5.71	5.79	3.20	3.48	3.48	3.48	3.54	3.54
Manufacturing	1972	13.80	23.64	27.43	32.95	26.08	16.98	30.84	34.89	34.89	34.89	34.89
	1962	18.48	31.31	33.21	38.64	30.96	23.22	39.99	39.24	39.24	39.24	39.24
Transportation, Communications, and Utilities	1972	13.16	10.70	7.69	6.87	9.82	10.26	7.88	8.10	7.88	8.10	8.10
	1962	12.30	9.77	7.53	7.09	11.42	10.41	7.13	7.67	7.13	7.67	7.67
Wholesale Trade	1972	10.79	7.89	7.27	7.18	7.93	8.23	8.36	9.59	8.36	9.59	9.59
	1962	13.02	7.23	7.91	7.63	8.13	10.80	8.96	10.57	8.96	10.57	10.57
Retail Trade	1972	14.30	22.70	21.92	20.53	17.94	15.08	15.72	13.69	15.72	13.69	13.69
	1962	16.07	20.86	19.61	18.94	18.95	17.16	15.18	13.73	15.18	13.73	13.73
Finance, Insurance, and Real Estate	1972	17.01	6.90	7.68	6.92	8.95	15.33	9.84	7.92	9.84	7.92	7.92
	1962	15.15	5.64	6.70	6.41	7.83	13.55	7.78	7.53	7.78	7.53	7.53
Services	1972	25.27	20.93	22.25	19.57	23.67	29.70	23.27	22.28	23.27	22.28	22.28
	1962	19.47	16.08	18.01	15.57	16.92	21.66	17.49	17.72	17.49	17.72	17.72

*Suffolk County was used because Boston is not a separate category in County Business Patterns.

**Column sum may not equal 100.00 due to rounding.

Source: Arthur D. Little, Inc., calculations based on data from U.S. Department of Commerce, County Business Patterns, 1962 and 1972.

TABLE II-3

POPULATION AND POPULATION DENSITIES FOR SAN FRANCISCO
AND SELECTED CITIES

<u>City</u>	<u>Population</u>		<u>Population per Square Mile</u>	
	<u>1960</u>	<u>1970</u>	<u>1960</u>	<u>1970</u>
San Francisco	740,400	715,700	16,300	15,800
Baltimore	939,000	905,800	12,000	11,600
Boston	697,200	641,100	15,200	13,900
Suffolk County	791,300	735,200	14,100	13,100
Philadelphia	2,002,500	1,948,600	15,600	15,200
St. Louis	750,000	622,200	12,300	10,200

Source: U.S. Department of Commerce, Bureau of the Census, 1960 Census of Population and 1970 Census of Population.

Table II-1 shows San Francisco to have a considerably smaller percentage of manufacturing employment than the rest of the Bay Area and the state. Table II-2 shows the share of manufacturing employment to be also lower than that of other cities of similar size and population densities. In 1972 manufacturing in San Francisco ranked fourth in sectorial employment* after services, FIRE, and retail trade. When the higher percentage of administrative and auxiliary activities (18.7% of total manufacturing employment in 1972) is excluded, manufacturing drops to fifth place. In contrast, manufacturing ranked number one for all other areas except Boston where it was ranked second to the services sector.

The low employment share of manufacturing in San Francisco is the result of two complementary trends, the decline in manufacturing employment in the city on one hand and the increase in total employment on the other hand. The combined effect of these two trends was to reduce manufacturing's share of total employment by 27.1% between 1962 and 1972. Though the magnitude of the relative decline (27.1%) was higher than in all other areas included in Table II-2, the trend itself was universal. During the same period the sector's share in the rest of the SMSA declined by 24.5%. The California share declined by 17.4%, the U.S. share by 14.7%, and Boston's share by 26.9%.

*The data exclude government which is second to the services sector in terms of total city employment.

Transportation, communications, and public utilities accounted for more than 13% of total nonagricultural, nongovernmental wage and salary employment in 1972. The sector's employment share in San Francisco was higher than in all other areas primarily due to (a) port-related activities and (b) a large communication sector which accounted for about 32% of total TCU employment in 1972.

Employment in the wholesale trade sector in San Francisco declined by about 6% between 1962 and 1972, contributing to a 17.1% decline in the sector's share of total employment.* The 17.1% decline in sectorial share was greater than that realized by any other area except Boston where the percentage decline was 23.8%. The only area where the sector's share did not show a decline is the rest of the SMSA.

The 11% decline in the retail trade sectorial share is due to the 1962 to 1972 increase in total employment rather than an actual decrease in retail employment per se. The relatively low sectorial share in comparison to the rest of the SMSA, the state, and the United States is due to the high ratio of total employment to population in San Francisco relative to these areas rather than a low level of sectorial activity relative to the city's population.

The FIRE sector in San Francisco is the second largest employer (excluding government) in the city. The sectorial employment share increased by 12.3% between 1962 and 1972 and remained the largest of all the areas included in Table II-2. Only Boston shows an employment share close to that of San Francisco. The sectorial share in the city is about 2.5 times that of the rest of the United States and the rest of the SMSA. When FIRE activity is measured in terms of the employment/population ratio, San Francisco has a ratio about 5 times that of the United States and 6 times that of the rest of the SMSA. These ratios indicate that well over two-thirds of the sectorial employment in the city is generated either directly or indirectly by out-of-the-city demand.

The FIRE sector shows a higher than average rate of growth for all areas, as reflected by the increasing sectorial shares in all areas. The only other sector realizing universal relative growth is the service sector.

The service sector in San Francisco is the largest employer in the city. All service activities (two-digit SIC codes), with only one exception, realized significant growth in the 1962-72 period, the only exception being personal services in which employment declined 17.8%. The largest employment gains took place in non-population support activities such as miscellaneous business services which increased by about 83.5%. The service sector in the city shows a higher employment share than any other area except Boston. Boston's share is higher than that of San Francisco due to the high concentration of Medical and Educational services (SIC codes 80 and 82) in Boston.

*"Total employment" refers here to the employment covered in Table II-2.

3. Indices of Dissimilarity

The sectorial breakdown in Table II-2 clearly indicates a greater similarity between the economic structures of San Francisco and Boston than between San Francisco and any other area. The structural data in Table II-2 were used to derive Dissimilarity Indices (DI) between San Francisco and the other areas with which the city was compared. The DI measures the overall difference between the economic (or sectorial) structure of any two given areas. The DI would be zero if the two areas had identical structures (i.e., the percentage share of every sector or activity is the same in each area) and equal to 100 if the two areas were entirely dissimilar (i.e., the areas having no common sectors or activities*).

In order to measure the degree of similarity (or dissimilarity) between San Francisco's overall economic structure and that of the other areas of comparison, we have calculated the dissimilarity indices between San Francisco and those areas. The results of these calculations are presented in Table II-4. Given the broad sectorial categories used in calculating the indices (seven sectors in all), a DI of less than 10 would present a fair degree of similarity while a value of about 20 or more would indicate a very low degree of similarity. Table II-4 shows the very significant differences existing between San Francisco and any other area, with Boston being the only exception. The city is as different from the rest of the SMSA in terms of overall sectorial structure as it is from the state. If the rest of the Bay Area would have been used rather than the rest of the SMSA, the DI would have been greater due to Santa Clara County. The DI of San Francisco compared with Santa Clara County is 30.73. The great dissimilarity between the city and the surrounding counties does not represent a low degree of dependence or the lack of intra-Bay Area linkages: it only illustrates the unique structure and function of the San Francisco economy.

The 1962 to 1972 decline of the DI between the city and the rest of the SMSA is due almost entirely to the lower level of construction activity in the rest of the SMSA in 1972. The only significant changes between 1962 and 1972 are the increasing structural differences between San Francisco and the state and the United States. The decline in the DI of Philadelphia reflects changes in the economic structure of the latter rather than in that of San Francisco.

4. Location Quotients

The sectorial structure of various areas presented in Table II-2 reflects the relative importance of each sector in terms of aggregate employment. A higher (or lower) average share of a certain sector does not

*The DI between areas A and B (DI_{AB}^A) is derived by the following equation:

$$DI_{AB}^A = \frac{\sum (E_i^A - E_i^B)}{2} \quad \text{where } E_i^A \text{ is the percentage of total employment in}$$

area A which is employed by industry (or sector) i and E_i^B is the corresponding percentage in area B.

TABLE II-4

**DISSIMILARITY INDICES – 1972 AND 1962
SAN FRANCISCO COMPARED WITH VARIOUS AREAS**

Area	Year	Index
San Francisco	1972	0.00
	1962	0.00
San Francisco-Oakland SMSA minus San Francisco County	1972	19.94
	1962	21.23
California	1972	21.38
	1962	19.79
United States	1972	25.72
	1962	23.24
Baltimore	1972	15.90
	1962	15.64
Boston (Suffolk County)	1972	8.36
	1962	8.02
Philadelphia	1972	18.44
	1962	21.21
St. Louis	1972	21.06
	1962	20.76

Source: Arthur D. Little, Inc., calculations from data in Table II-2.

necessarily mean that this is a net export (or import) sector reflecting the area's comparative advantage (or disadvantage) in that sector.* The exact determination of export or import levels requires a considerable amount of data which are not readily available.

It is, however, possible to identify significant net export or import activities and estimate their magnitudes with the aid of Location Quotient (LQ) measures. The LQ measures show the relative ratio of employment in a certain sector (or activity) in a given area as compared with another area. An employment LQ of one, for example, for San Francisco versus the United States would mean that the same percentage of total employment in San Francisco is employed in that sector as in the United States as a whole. An LQ of less than one would mean a lower percentage in San Francisco than in the United States and an LQ greater than one would mean a higher percentage in San Francisco than in the nation. An LQ greater or smaller than one reflects not only a comparative advantage or disadvantage but also differences in employment to population ratios, technology, income levels, taste, etc.

The most important of these factors, for our analysis, is the employment to population ratio. An activity which is primarily oriented toward population support, for example, depends on the size of the population more than on the number of people working in the area. The LQ for that activity should therefore be based on employment shares relative to population rather than employment shares to total employment. Table II-5 presents the CBP employment-to-population ratios for various areas.

Table II-5 shows the employment-to-population ratios in San Francisco to be double those of the state and the nation. The primary reason for that is the city's function as an urban employment center. Though the ratios for the nation and the city increased at virtually the same rate between 1962 and 1972 (from 0.23 to 0.28 for the nation and from 0.47 to 0.56 for the city), the difference between the two increased by about 17%.** The increase is due to the declining city population on the one hand, and increasing city employment on the other hand. San Francisco's position as an employment center for in-commuters is not unique. Boston and St. Louis indicate an even higher ratio of in-commuters than San Francisco.

*The term net export (or import) sector refers to the net balance of export versus import activities of the sector where activities are measured in terms of employment levels. It does not mean that a net manufacturing export area does not import any manufacturing output. Santa Clara County, for example, is a net exporter of manufacturing output. Its manufacturing, however, is concentrated in few export industries while most manufactured goods consumed by county residents are imported from other areas.

**From $0.47 - 0.23 = 0.24$ in 1960 to $0.56 - 0.28 = 0.28$ in 1970.

TABLE II-5

EMPLOYMENT-TO-POPULATION RATIOS FOR SELECTED AREAS

<u>Area</u>	<u>Employment-to- Population Ratio</u>	
	<u>1962</u>	<u>1972</u>
San Francisco	0.47	0.56
San Francisco-Oakland SMSA minus San Francisco County	0.21	0.24
California	0.24	0.27
United States	0.23	0.28
Baltimore	0.36	0.40
Boston	0.54	0.61
St. Louis	0.49	0.60

Source: ADL estimates based on data from U.S. Department of Commerce, County Business Patterns, 1960 Census of Population, 1970 Census of Population, and Current Population Reports.

Due to the significant differences between the employment-to-population ratios we calculated two LQ measures. The first LQ (LQ_1) is based on employment shares relative to total employment while the second LQ (LQ_2) is based on employment shares relative to total population.*

Table II-6 presents the location quotients of San Francisco, by major industrial sectors, in comparison with the United States and selected urban centers.**

As explained above, construction activities are susceptible to significant temporary fluctuations. The construction LQs which are based on CBP data cannot, therefore, be relied upon as accurate measures of construction activity. But since all LQs (with the exception of the 1962 Baltimore base) are equal to or greater than one, it is reasonable to conclude that overall construction activity in San Francisco is, relatively, at least as high as in similar size urban centers and the rest of the nation.

Table II-2 shows that San Francisco has the lowest manufacturing employment share of all comparable areas. Table II-6 shows that to be the case even when LQs are calculated relative to population rather than employment. That share declined between 1962 and 1972 relative to all

*The ratios between LQ_2 and LQ_1 are equal to the ratios between the employment-to-population ratios of the various areas presented in Table II-5. The 1972 LQ_2 for San Francisco with respect to the United States, for example, is double that of LQ_1 since San Francisco in 1972 had twice the U.S. employment-to-population ratio.

**For a more detailed presentation by two-digit SIC codes, see Appendix A, C

TABLE II-6

LOCATION QUOTIENTS — 1972 AND 1962
SAN FRANCISCO COMPARED WITH SELECTED AREAS

	Year	United States		Baltimore		Boston (Suffolk County) ^a		St. Louis	
		LQ ₁ ^b	LQ ₂ ^c	LQ ₁	LQ ₂	LQ ₁	LQ ₂	LQ ₁	LQ ₂
Construction	1972	1.0	1.9	1.0	1.4	1.3	1.2	1.6	1.5
	1962	1.0	1.9	0.9	1.2	1.7	1.5	1.5	1.5
Manufacturing	1972	0.43	0.85	0.53	0.72	0.81	0.75	0.39	0.35
	1962	0.49	0.97	0.60	0.78	0.77	0.68	0.45	0.45
Transportation, Com- munications, and Utilities	1972	1.9	3.9	1.5	2.0	1.3	1.2	1.6	1.5
	1962	1.8	3.5	1.1	1.4	1.1	1.0	1.5	1.5
Wholesale Trade	1972	1.5	3.0	1.3	1.9	1.3	1.2	1.1	1.1
	1962	1.7	3.5	1.6	2.0	1.2	1.0	1.2	1.2
Retail Trade	1972	0.7	1.4	0.8	1.1	1.0	0.9	1.0	1.0
	1962	0.9	1.7	0.9	1.1	0.9	0.8	1.1	1.1
Finance, Insurance, and Real Estate	1972	2.5	5.0	1.9	2.6	1.1	1.0	2.2	2.0
	1962	2.4	4.8	1.9	2.5	1.1	1.0	1.9	1.9
Services	1972	1.3	2.6	1.1	1.5	0.9	0.8	1.1	1.1
	1962	1.3	2.5	1.2	1.5	0.9	0.8	1.1	1.1

a. Suffolk County was used because Boston is not separated out in *County Business Patterns*.

b. $LQ_1 = E_i^A / E_i^B$ where E_i = employment in industry i as a percentage of total employment; A = San Francisco, B = comparative areas.

c. $LQ_2 = P_i^A / P_i^B$ where P_i = employment in industry i as a percentage of total population; A = San Francisco, B = comparative areas

areas except Boston. Compared with the United States the other cities showed a manufacturing LQ greater than one when adjusted for employment-to-population ratios (i.e., LQ_2).*

The low LQ of manufacturing in San Francisco relative to the United States and other urban centers indicates an overall competitive disadvantage on the part of city manufacturers.** The sectorial competitive disadvantage does not mean that every manufacturing activity realizes a competitive disadvantage in San Francisco. Some activities clearly enjoy a competitive advantage from a city location. Nor does this necessarily indicate that the city as a whole (from the social point of view) realizes a comparative disadvantage which is identical with the competitive disadvantage of its manufacturers. City policies such as tax rates, for example, might create a competitive disadvantage for activities in which the city might have a potentially objective comparative advantage. It is important to identify the specific activities in which manufacturing realizes a competitive disadvantage and to analyze their causes in order to determine future trends, policy options, and their impacts. These crucial problems will be dealt with in the following sections of this report.

Employment in TCU increased between 1962 and 1972 at a higher rate than in all other areas, thus increasing San Francisco's already high LQ even further. The increase is due primarily to the communication, air transportation, and transportation services activities which grew at a significantly higher than national rate.

As shown in Table II-2, wholesale trade employment increased at a lower than average rate in all areas (i.e., the sector's employment share declined between 1962 and 1972). San Francisco realized an actual 5.9% decline in employment between 1962 and 1972 according to CBP data. Table II-6 shows the city to be a declining, but still important, wholesale trade center.

The retail trade sector is primarily engaged in population support activities. Although in-commuters, tourists, and out-of-the-city shopping centers all have a significant impact on trade activities, especially those in specific locations (the central business district), retail trade as a whole usually shows a greater similarity for similar size areas than any other sector. It is thus not surprising that the LQs of retail trade are very close to one for all the areas in Table II-6. The only significant change between 1962 and 1972 is the decline of San Francisco's LQ as compared to the United States as a whole. The decline is primarily due to the increased self-sufficiency of the rest of the SMSA in retail trade. Population shifts

*The LQ of area A compared with area B can be calculated from Table II-6 by dividing the LQ of San Francisco compared to B by the San Francisco LQ compared to A. Boston's manufacturing LQ_2 compared to the United States in 1972, for example, is equal to $0.85/0.72 \approx 1.18$.

**The terms "competitive advantage" or "disadvantage" are used when dealing with the locational decisions of the private sector since the private entrepreneur is concerned with his competitive (or absolute) advantage rather than with the economy's objective or potential comparative advantage vis-a-vis other areas.

in the SMSA were the main reason for the city's declining competitive advantage vis-a-vis the rest of the SMSA although no competitive disadvantage has developed.

The FIRE sector, in the United States and all other comparable areas, grew at a higher than average rate. Sectorial growth in San Francisco was slightly greater, in relative terms, than in the United States. The high LQ of FIRE employment in the city reflects the city's strong competitive advantage in that sector. The only other area showing a similar overall sectorial comparative advantage is Boston.

The services sector was, and is, expected to remain the fastest growing sector in the United States. In San Francisco services grew at a higher relative rate than in all other areas except Boston, retaining a greater than one LQ except when compared to Boston.

5. Economic Growth and Stability

Figure II-1 illustrates San Francisco's employment trends by major industrial sectors between 1958 and 1973.* Total employment in that period increased by 12.4% which yields an average annual rate of 0.78%. Most of the growth occurred during the four-year period 1965-68 when employment grew at an average annual rate of 2.3%. At the beginning of the period (1958) government was the largest sectorial employer in the city with manufacturing the second largest and services a very close third. During virtually the entire 15-year period, services grew at a high and steady rate (3.29% average annual rate) becoming the largest employment sector while manufacturing declined steadily, at a 1.78% average annual rate, dropping to sixth place in terms of sectorial employment. Government employment grew during the first 11 years (1958-1969) at an average annual rate of 2.47%, reaching its peak in 1969 after which it started a four-year decline. The 1969-73 decline reduced government employment by almost 7%, lowering the average annual growth rate for the entire 15-year period to 1.32%.

TCU employment fluctuated during the entire period, showing a 1973 employment level which is virtually identical with that of 1958 (54,300 versus 54,100). FIRE employment increased at an overall fairly steady annual rate of 3.1%.

The retail trade sector remained quite stable with only one significant "temporary" employment peak in 1969. Wholesale trade employment, on the other hand, was stable only during the first third of the period (1958-1963) after which it declined steadily until 1972. Construction employment shows significant fluctuations during the 1958-1973 period with no apparent overall trend indicated.

*The figure is based on the California Department of Human Resources Development (HRD) data which differ from CBP data. HRD was used since annual CBP data are available only since 1964.

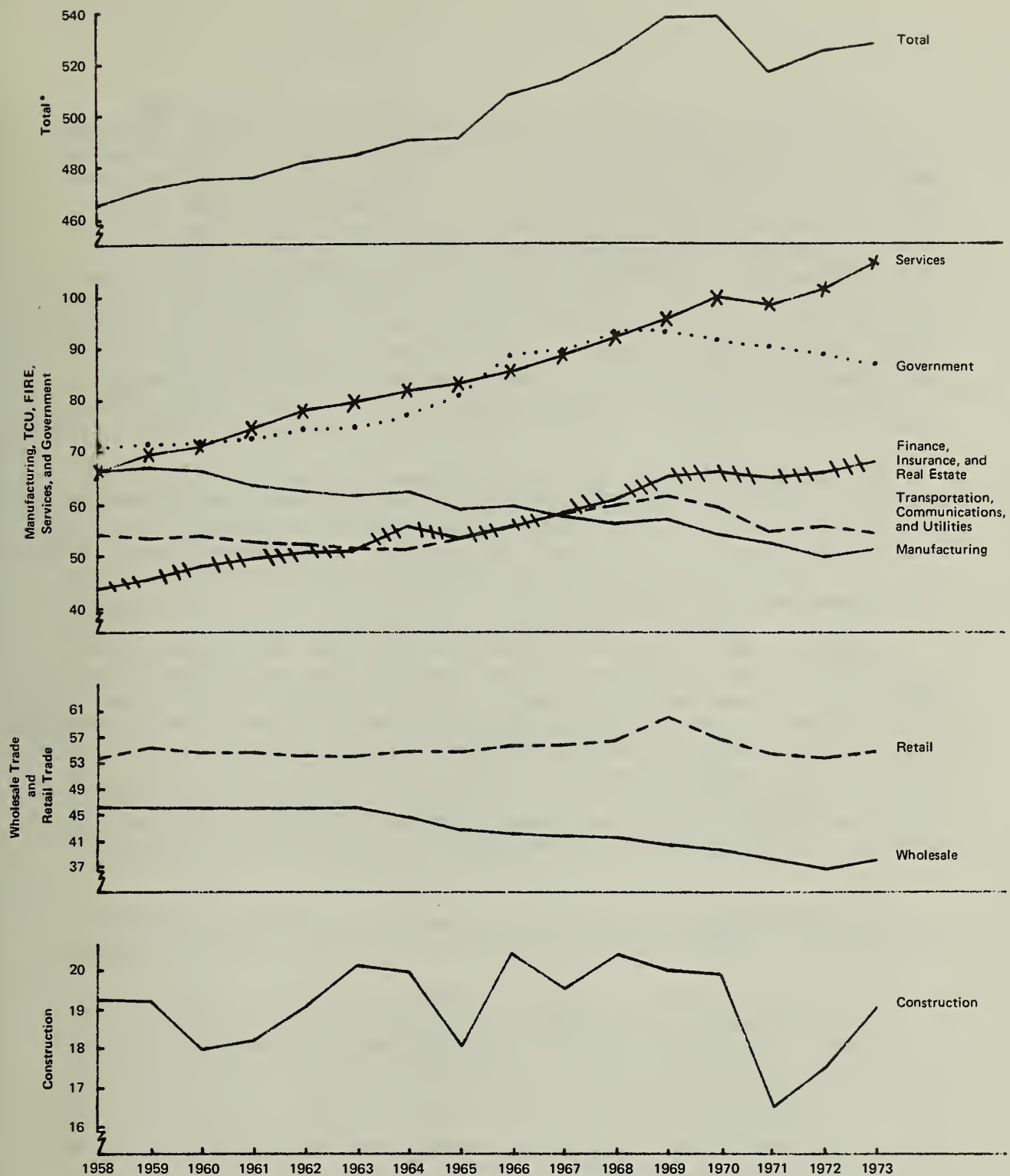


FIGURE II-1 SAN FRANCISCO EMPLOYMENT BY INDUSTRY - 1958-1973

Sources: Data used for "total" calculated by Arthur D. Little, Inc., based on Area Manpower Review, San Francisco-Oakland SMSA, California Department of Human Resources Development, April 1973. Remaining graphs constructed from data obtained from revisions of Estimated Nonagricultural Wage and Salary and Agricultural Employment, California Employment Development Division, March 1973.

Although the economic structure of San Francisco is quite different from that of the United States, there are certain basic similarities in the relative stability of the major industrial sectors in San Francisco and the nation. Figure II-2 illustrates the yearly percentage changes in U.S. employment by major industrial sector between 1947 and 1974. The eight major sectors illustrated in Figure II-2 can be divided into three categories. The first category includes wide fluctuation, slow growth sectors. There are three sectors in this category: construction, manufacturing, and TCU, the latter showing smaller fluctuations and less growth than the other two sectors. The second category includes the two trade sectors showing slightly higher than average growth and medium fluctuations. The third category includes high growth, high stability sectors. This category includes the FIRE, services, and government sectors.

The major differences in terms of sectorial growth and stability between San Francisco and the United States are in the first two categories. Construction in San Francisco shows the same basic fluctuations as in the nation, the difference being the lack of any real employment growth in the sector in the city. The main reason for that is the net decrease in the city's population during that period.

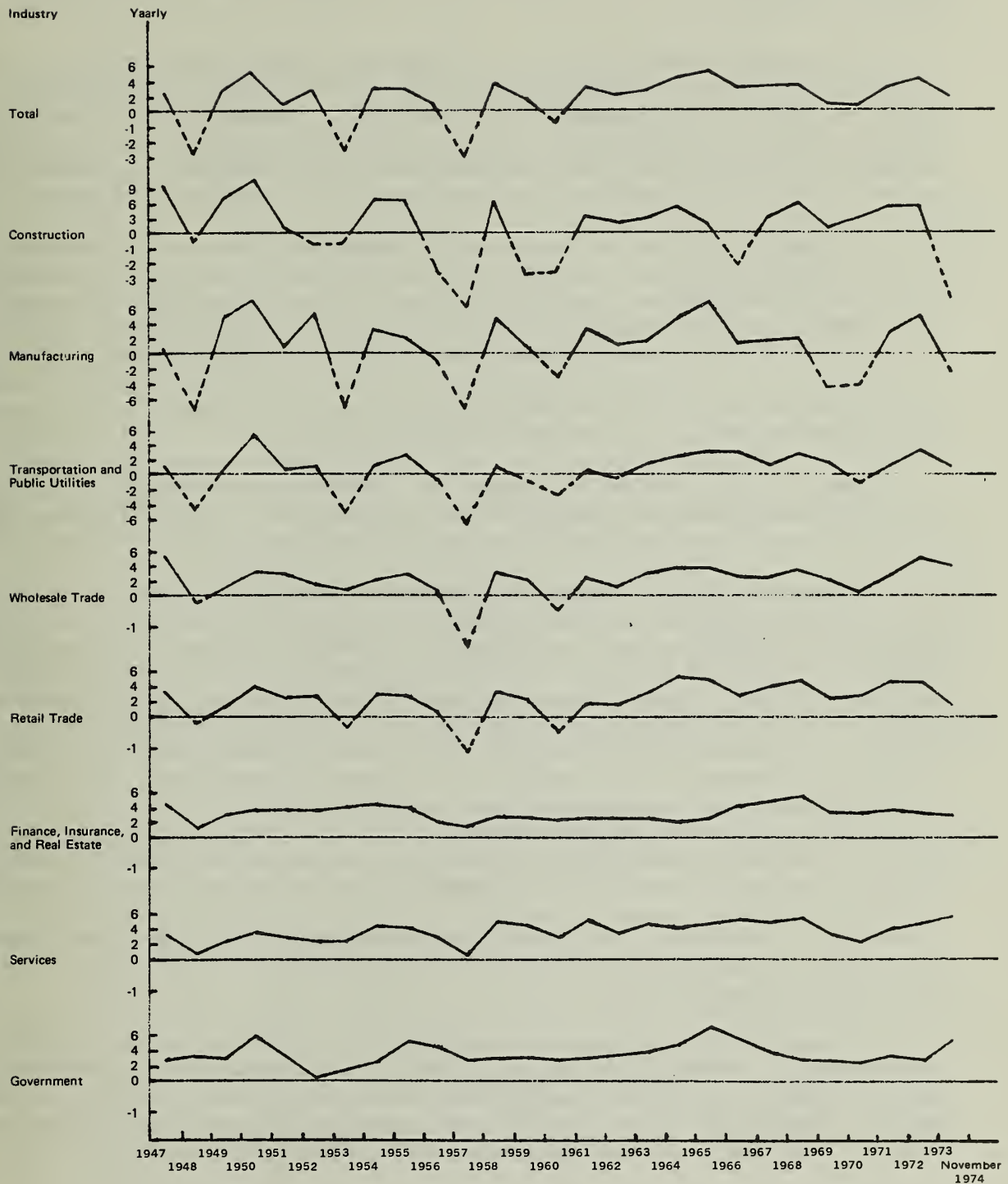
Manufacturing and wholesale trade, on the other hand, show a lower degree of relative fluctuation in San Francisco than in the United States. Employment in these sectors, however, declined in the city while increasing in the nation as a whole. The retail trade sector in San Francisco remained fairly stable, showing a greater relative stability than in the nation and virtually no long-term growth due to the city's population decline. The TCU, FIRE, government, and services sectors show the same basic trends as in the United States with the only significant difference being the decline of government employment in San Francisco during the 1969-73 period.

C. COMPARATIVE ANALYSIS OF SAN FRANCISCO AS A LOCATION FOR SECTORS AND INDUSTRIES

The previous section presented a summary of recent trends in the economic structure of San Francisco including comparisons with the rest of the SMSA, the nation, and selected urban centers. This section presents the major findings of our analysis of the factors affecting these trends. The identification and understanding of these factors are crucial for (1) projecting future employment trends by industry which will affect future land use in the city, and (2) determining the feasibility and desirability of trend alteration.

1. Manufacturing

The factors which determine the economic structure and function of San Francisco can be separated into "objective" and "subjective" factors. The objective factors relate to the nature and function of San Francisco as a regional and in some respects a national urban center. The subjective factors are those which are unique to the San Francisco economy. They



Source: Based on data published in *Monthly Labor Review*, January 1975, U.S. Department of Labor, Bureau of Labor Statistics.

FIGURE II-2 PERCENTAGE CHANGE IN EMPLOYMENT BY MAJOR INDUSTRY GROUP FOR THE UNITED STATES (1947-NOVEMBER 1974)

include (a) historical developments, (b) specific intraregional and inter-regional linkages, and (c) unique urban and regional demographic and topographic conditions.

Recent and existing trends in manufacturing employment in San Francisco are the result of both objective and subjective factors. The overall decline in manufacturing employment in the city is primarily due to objective factors -- i.e., declining employment in manufacturing is a common phenomenon in similar urban centers. On the other hand, the magnitude and industrial mix of manufacturing decline are significantly affected by subjective factors.

The general decline in manufacturing employment in urban centers is due to several objective factors. The two most important are (a) population shifts which reduced the population of dense urban centers while significantly increasing the population of urbanized or metropolitan areas as a whole, and (b) technological development which increased the optimal level of output (i.e., extending economies of scale over a larger range of output for most manufacturing activities) and increased the demand for land-intensive single-story structures with ample parking space.

These trends combined to reduce the traditional locational advantages of urban centers for the production and distribution of manufacturing output while increasing the attractiveness of out-of-the-city locations.

Although an overall employment decline was (and is) probably inevitable* due to these objective considerations, the rate of decline was (and will be) affected by subjective factors as well. Information obtained through selected interviews conducted by ADL shows that the majority of city manufacturers consider the city's tax structure (property and business/payroll expense taxes) to be an important factor in either reducing their competitive advantage or increasing their disadvantage versus out-of-the-city manufacturers. A significant minority (especially in the commercial printing and publishing industry) mentioned unfavorable labor relations in the city as an important factor. Only a few complained directly about the city's attitude toward the sector although many believe the city to be quite indifferent, showing lack of interest in the future of manufacturing in San Francisco. Although information obtained through interviews should be critically evaluated rather than accepted at face value, we believe that the factors mentioned above are of significant importance in explaining past trends and affecting future developments.

The impacts of the above factors on the various activities have not been uniform. As expected, manufacturers with a strong city market orientation and those with large fixed capital investments were unwilling or unable to leave their present locations, while other activities which do not require face-to-face contact or sell primarily in the city itself, showed a high

*The judgment concerning the inevitability of the decline assumes rational and socially desirable public policy options. It excludes, for example, the theoretical possibility of high-cost, low-benefit policies which would artificially turn a city's comparative disadvantage into a producer's competitive advantage.

propensity to move to an out-of-the-city location whenever relocation was desirable (due to expansion, for example) or necessary (redevelopment, for example).

Although many firms which left the city located in the surrounding counties, the overall decline in city manufacturing was not due to the "objective" competitive advantage of these counties in manufacturing activities. In other words, while the rest of the SMSA as a whole enjoys an overall competitive advantage over San Francisco in manufacturing activities, it does not enjoy such an advantage when compared with the rest of the nation. This is illustrated by the minor overall decrease in actual manufacturing employment (administrative and auxiliary activities excluded) in the rest of the SMSA between 1962 and 1972. In San Francisco manufacturing employment, excluding administrative and auxiliary activities, declined during that period by 11,433 employees while that employment in the SMSA declined by 11,735 employees.

As explained above, the factors affecting manufacturing employment in center cities do not impact all activities equally. They are therefore expected to have a significant effect on the industrial mix of manufacturing employment in urban centers. The more objective these factors are (i.e., the more similar they are in similar urban centers) the greater is the tendency toward manufacturing mix similarity among urban centers. The results of our dissimilarity analysis show the importance of the objective factors in affecting manufacturing employment in San Francisco. According to our analysis San Francisco's manufacturing mix in 1972 was significantly more similar to that of other urban centers than in 1962 while increasing its dissimilarity with manufacturing in the rest of the SMSA. In 1962 the dissimilarity index of the manufacturing sector between San Francisco and the rest of the SMSA was 27.7%, while the DI in comparison with Boston was 32.3%. The corresponding values in 1972 were 45.6% for the rest of the SMSA and 17.1% for Boston.*

The next step was to analyze San Francisco's competitive position as a location for specific industrial activities. The main results of our analysis are presented below by two-digit SIC headings.

a. Food and Kindred Products (SIC 20)

Food manufacturing industries in San Francisco have declined at a significantly higher than average rate. Though still a major manufacturing industry group in the city, its share of sectorial employment declined from 19.2% in 1962 to 15.7% in 1972 and 14.4% in 1973. Table II-7 presents a comparison of the industry's decline in San Francisco and other selected areas by three-digit SIC codes. The overall percentage decline in urban centers was much higher than that in the United States as a whole due to

*The manufacturing DIs were based on a 20-category breakdown which included 18 two-digit SIC code industry groups, an administrative and auxiliary category, and a category which included all industries not located in San Francisco. Considering the total number of categories, the 17.1% DI represents significant similarity while the 45.6% represents a basic dissimilarity.

TABLE II-7

EMPLOYMENT CHANGE IN THE FOOD AND KINDRED PRODUCTS INDUSTRY
FROM 1962 TO 1972

<u>SIC Code</u>	<u>Industry</u>	<u>San Francisco</u>	<u>United States</u>	<u>Baltimore</u>	<u>Boston (Suffolk County)</u>	<u>St. Louis</u>
20	Food and Kindred Products	-30.7%	-2.7%	-12.8%	-28.7%	-24.3%
201	Meat Products	-23.2	6.5	-16.0	-7.8	-58.4
202	Dairy Products	-18.1	-30.4	-19.0	-55.9	-56.5
203	Canned, Cured, and Frozen Foods	-38.6	27.7	-64.6	31.2	-51.9
205	Bakery Products	-27.9	-15.9	-8.6	-20.4	-6.8
207	Confectionery and Related Products	-14.7	7.0	-2.9	-51.5	70.4
208	Beverages	-33.8	7.2	-16.1	-21.0	56.8
209	Miscellaneous Foods and Kindred Products	-43.0	1.8	27.0	D	-46.2

D = Data withheld.

Source: Arthur D. Little, Inc., calculations based on data from County Business Patterns, 1962 and 1972.

population shifts, technological developments, and other locational considerations. San Francisco is the only area realizing a decline in all three-digit industries, ranging from a 14.7% decline in confectionary and related products employment to a 43% decline in miscellaneous foods employment between 1962 and 1972. The overall decline of 30.7% in employment represents 3708 jobs.

During the same period food industry employment in the rest of the SMSA declined by 22.7% or 4530 jobs. Although a smaller percentage, this decline is even more significant than the city's decline when population changes are taken into consideration.

According to the 1967 U.S. input-output structure,* employee compensation accounted for about 14.7% of the total industry's value of output. Yearly wages in San Francisco (\$9,630) and the SMSA (\$9,566) in 1972 were significantly higher than in the state (\$8,347) and the nation (\$7,857).** While the percentage wage differential between the city, the SMSA, and the nation was basically the same as in 1962, its locational impact probably increased due to the overall decline in the region's comparative advantage in food production (i.e., the 3.3% increase in unit costs due to higher wages in the city were probably more important in 1972 than in 1962).

The major conclusion to be drawn from our comparative analysis of the food industry is that most of this industry's decline in San Francisco is due to (1) an overall decline in the comparative advantage of the entire SMSA and (2) general locational trends of the industry in the United States which reduced the comparative advantages of central city locations for food manufacturing.

(1) Meat Products (SIC 201)

This industry group includes meat packing plants, sausages and other prepared meats, and poultry plants. Employment in the industry declined from 1562 in 1962, to 1200 in 1972, to 1067 in 1973. An additional significant decline probably took place since March 1973 due to the move of the Allan Meat Packing Company from Butchertown to Stockton. While U.S. employment in the industry increased by 6.5% between 1962 and 1972, all urban areas with which San Francisco was compared show an employment decline.

Although some activities such as sausage and salami preparation have a limited competitive advantage in the city due to special institutional and traditional market demands, meat packing and poultry dressing plants have no such advantages and are unlikely to remain in the city in case of relocation. The Allan Meat Packing Company, for example, left because of urban renewal activity in the vicinity. The company's superintendent indicated that a new site was offered but it would not have been ready until after the old plant had been razed. Although the move of the company to an out-of-the-city location might have been prevented, it is apparent that

*U.S. Department of Commerce, Survey of Current Business, February 1974.

**Wage estimates are based on first quarter taxable payroll data in CBP publications.

the city has no overall competitive advantage in such activities. This is not meant to imply that public policy is ineffective in influencing such activities. It only indicates that public policy can be most effective in eliminating negative pressures and reducing the competitive disadvantages, rather than generating industrial growth in this industry (and in manufacturing in general).

(2) Dairy Products (SIC 202)

Employment in the dairy products industry in San Francisco declined from 1160 in 1962 to 950 in 1972 and then increased to 1139 in 1973. The percentage of decline in San Francisco was significantly lower than that in the United States (-30.4% between 1962 and 1972) and in all other urban centers. The decline in the industry in the United States was due to a large extent to a decline in the employment engaged in dairy delivery.

Increased competition from large retail chains which bottle milk in their own outlying rural districts might adversely affect the competitive position of the industry in the city. The most optimistic outlook is for employment stabilization with a very low probability of employment growth.

(3) Canned, Cured, and Frozen Foods (SIC 203)

The canned and frozen foods industry group is the only food industry in the nation which realized significant employment growth (up ^{27.7%} 2.7% between 1962 and 1972). Among the urban centers analyzed, only Boston showed a significant increase; all other cities realized employment declines. In San Francisco employment declined from 1286 in 1962 to 790 in 1972, to 763 in 1973. The national increase is primarily due to the increased demand for canned and frozen fruits and vegetables (SIC 2033 and 2037). San Francisco did not benefit from that growth and is most unlikely to do so in the future.

There are three major reasons for the city's competitive disadvantage in these industries: (a) the industry's resource market orientation which tends to locate the industry close to the growing areas, (b) the large land requirement of the industry, and (c) the high city wage in the industry. The average annual wage in the United States and Boston in the canned and frozen foods industry is significantly lower than that of the food industry as a whole, while in San Francisco the situation is reversed. As a result San Francisco's average wage in 1972 (\$10,288) was higher by 64.7% than the U.S. average and 28.7% higher than in Boston.

(4) Bakery Products (SIC 205)

Employment in the United States declined between 1962 and 1972 by 15.9% while the number of establishments declined by more than 40%. In San Francisco employment during the same period declined by 27.9%, while the number of establishments declined by only 14.3%. The small decline in the number of establishments in the city relative to the employment

decline is due to the large number of small establishments which are engaged in specialty bakery products. The decline from 2534 employees in 1962 to 1828 in 1972 was due primarily to technological changes.

Although San Francisco is likely to retain an overall competitive advantage in the industry, employment will probably continue to decline (1973 employment was 1612, down 11.8% from 1972).

(5) Beverages (SIC 208)

Employment in the beverages industry in San Francisco declined by 43% between 1962 and 1973. In 1973 the industry's employment in the city was 1415, compared with 2483 in 1962 and 1643 in 1972. The malt liquors industry (SIC 2082) accounted for 60% of the three-digit industry employment in 1973.

It is apparent that the city has lost its competitive advantage in the industry and prospects for the future are rather dim. This is due to the high capital cost per unit of output which is forcing many regional brewers, across the nation, out of business because they cannot compete with the large national brewers. In 1972, for example, the three largest brewers supplied 44% of the national market.

b. Apparel and Other Textile Products (SIC 23)

The apparel industry is the second largest manufacturing industry in the city and the only one to realize a significant absolute employment growth. Employment in the industry increased by 1469 during the 1962-72 period and by an additional 1294 between 1972 and 1973. The industry's employment of 9376 workers represented 17.3% of total manufacturing employment in 1973.* The industry's share increases to 21.5% when administrative and auxiliary activities are excluded. Table II-8 compares the industry's growth in San Francisco with that in the United States and other cities; as shown, this growth in the city is especially impressive when compared with the much lower national growth rate and the significant decline in other cities.

The industry's growth in the city reflects San Francisco's strong competitive advantage in the apparel industry. That advantage is based on the city's characteristics rather than its Bay Area location. This is indicated by the city's share of total SMSA employment in the industry. In 1972, for example, the city accounted for 84% of total SMSA employment in the apparel industry.

Table II-9 presents employment and wage comparisons between San Francisco, the United States, and Boston by three-digit SIC codes. The industrial mix in San Francisco is shown to differ significantly from

*The employment estimates are based on CBP data which exclude certain groups of employed persons such as nonwage and salary employment. Due to the industry's structure it is probable that the actual number of persons whose employment is directly related to the apparel industry is significantly higher than indicated by CBP data.

TABLE II-8

EMPLOYMENT CHANGE IN THE APPAREL AND RELATED PRODUCTS INDUSTRY
FROM 1962 TO 1972

SIC Code	Industry	San Francisco	United States	Baltimore	Boston (Suffolk County)	St. Louis	Philadelphia
23	Apparel and Other Textile Products	22.2%	7.7%	-28.3%	-41.4%	-33.3%	-19.1%
231	Men's and Boys' Suits and Coats	-12.3	-2.9	-25.9	-74.5	-51.0	-10.3
232	Men's and Boys' Furnishings	1.4	22.5	-28.9	11.8	-33.2	-21.4
233	Women's and Misses' Outerwear	26.6	6.2	-62.4	-37.7	-37.5	-29.8
239	Miscellaneous Fabri- cated Textile Products	54.1	24.9	-61.3	-22.7	-16.0	-16.9

Source: Arthur D. Little, Inc., calculations based on data from County Business Patterns, 1962 and 1972.

TABLE II-9

EMPLOYMENT AND WAGE COMPARISONS IN THE APPAREL INDUSTRY
FOR SAN FRANCISCO, THE UNITED STATES, AND BOSTON - 1962 AND 1972

SIC Code	San Francisco			United States			Boston (Suffolk County)						
	Employment		Average Annual Wage	Employment		Average Annual Wage	Employment		Average Annual Wage				
	1962	1972	1962	1972	1962	1972	1962	1972	1962	1972			
23	Apparel and Other Textile Products	6,613	8,082	\$ 3,539	\$ 6,049	1,252,443	1,349,000	\$ 3,298	\$ 5,182	18,841	11,047	\$ 3,842	\$ 5,800
231	Men's and Boys' Suits and Coats	228	200	4,053	5,260	120,901	117,422	3,803	6,169	3,792	967	4,022	6,155
232	Men's and Boys' Furnishings	1,168	1,184	3,072	10,132	298,749	366,015	2,836	4,679	1,156	1,292	3,599	5,718
233	Women's and Misses' Outerwear	3,701	4,687	3,600	5,620	381,461	404,924	3,410	5,220	8,211	5,118	3,965	6,099
238	Miscellaneous Apparel and Accessories	-	160	-	5,100	60,650	65,232	3,202	5,080	1,835	443	3,435	6,591
239	Miscellaneous Fabricated Textile Products	752	1,159	4,229	5,467	140,245	175,098	3,592	5,926	2,852	2,206	3,453	5,209

Source: Arthur D. Little, Inc., calculations based on data from County Business Patterns, 1962 and 1972.

that of the nation and to a much lesser degree from that of Boston. While Women's and Misses' Outerwear (SIC 233) activities are ranked number one in all areas, their employment share in San Francisco (58% in 1972) is almost twice the U.S. average (30% in 1972) and 25% greater than in Boston (46.3% in 1972).

The city's strong competitive advantage in the production of women's outerwear is due to two major factors: the city's ability to attract successful specialized fashion designers, and the availability of a low-cost, mostly nonunion labor force. The availability of low-cost labor (mostly women of Asian and Latin origin) is illustrated by the fact that in 1972 the average annual wage in San Francisco was only 7.7% higher than the national average and 7.9% lower than in Boston.

The importance of a labor market orientation and some face-to-face contact gives the city a comparative advantage over out-of-the-city locations in most of these activities. The cost of land, the availability of parking space, and tax differentials, on the other hand, reduce that advantage and in some activities create a competitive disadvantage.

At present there are no indications that San Francisco's overall comparative advantage in the apparel industry is weakening. It is therefore probable that the industry will continue to grow relative to the nation, at least in the short run. However, it is very difficult to forecast the industry's long-term prospects due to the nature of the factors affecting the city's competitive advantage. The high degree of dependence of the industry in San Francisco on fashion leadership and cheap labor are major sources of potential instability for the future. A change in fashions; or the loss of several successful designers, combined with even a slight increase in labor costs might turn a competitive advantage into a disadvantage resulting in a major employment decline in the city.

Another major factor which contributes significantly to locational instability is the low fixed capital requirement of the industry. The high degree of locational instability is illustrated by Table II-8. All of the cities in Table II-8, except San Francisco, showed major employment declines ranging from 19.1% in Philadelphia to 41.4% in Boston during the 1962 to 1972 period. The average decline in the more fashion sensitive activities, which dominate the industry in San Francisco, was even greater than for the industry as a whole. The high degree of competition is illustrated by the relatively minor wage differential in the industry's average annual wages between San Francisco and other areas.

c. Furniture and Fixtures (SIC 25)

Employment in the furniture and fixtures industry in San Francisco declined from 1977 employees in 1962 to 1168 in 1972 to 1212 in 1973. Table II-10 presents a comparison of the industry in San Francisco and selected areas. As shown, the employment decline in San Francisco followed the general downward trend of the industry in urban centers, although there was significant growth in the United States as a whole.

TABLE II-10

EMPLOYMENT AND WAGE COMPARISONS FOR THE FURNITURE AND FIXTURES INDUSTRY
BETWEEN SAN FRANCISCO AND SELECTED AREAS - 1962 AND 1972

Area	Employment		Percent Change Between 1962 & 1972	Average Annual Wage	
	1962	1972		1962	1972
San Francisco	1,977 (26.4)*	1,168 (20.5)	-40.9%	\$6,005	\$9,017
San Francisco-Oakland SMSA	4,380 (19.7)	4,296 (24.4)	-1.9	5,922	8,916
United States	364,166 (37.7)	468,311 (50.7)	28.6	4,322	6,583
Baltimore	3,357 (50.9)	2,194 (45.7)	-34.6	4,471	6,775
Boston (Suffolk County)	1,706 (17.0)	1,402 (21.6)	-17.8	4,992	8,057
St. Louis	4,119 (58.6)	2,157 (55.3)	-47.6	4,647	6,329

*Numbers in parentheses show average employment per establishment.

Source: Arthur D. Little, Inc., calculations based on data from County Business Patterns, 1962 and 1972.

The slight decline in the entire SMSA shows that the increase in the rest of the SMSA was about equal in magnitude to the decline in the city. This indicates both a San Francisco competitive disadvantage compared with the rest of the SMSA and an overall SMSA disadvantage compared with the rest of the nation.

The decline of the industry group in San Francisco and other urban centers was not equally distributed among the various activities of which the industry is comprised. The decline occurred primarily in large-scale activities as indicated by the general decline in the average employee per establishment values in the cities, the only exception being Boston which had no large establishments in 1962. The decrease in the average size urban centers's establishments is contrary to the overall national trend toward larger establishments. In the United States as a whole, the number of establishments declined by 4.4% between 1962 and 1972 while employment increased by 28.6%.

The industry's overall decline in San Francisco is not the result of a uniform and steady downward trend. The recent period should actually be divided into two main periods, 1959 to 1965 and 1965 to 1973. The first period shows a significant employment decline due primarily to the out-migration of large establishments. At the start of that period the industry employed 2432 workers. The number declined to 1288 in 1962 and to 1288 in 1965. The second period, on the other hand, shows a high degree of overall employment stability -- 1178 employees in 1966, 1168 employees in 1972, and 1212 employees in 1973.

The changes in the industry's activities in San Francisco reflect the city's competitive disadvantage in large-scale activities, while retaining some advantages for certain smaller-scale activities. Cities in general had an historical locational advantage due to the industry's market orientation and its reliance on the cities' urban labor forces. Population shifts and technological changes, however, have significantly reduced these advantages of urban centers while increasing their disadvantages. The technological changes increased the advantages of large-scale production and the land-employee ratio. The increase in the amount of land required increased the competitive advantage of non-central-city locations. The population shifts, on the other hand, reduced the cities' labor pool advantages and, in combination with large-scale economies, moved the market area centers of gravity of large-scale production away from the cities.

An additional factor contributing to the region's competitive disadvantage is the much higher than average wages in the Bay Area. Although low wages per se do not assure a competitive advantage (low wages in Baltimore and St. Louis did not prevent a significant decline in the industry in these cities, as shown in Table II-10), it is clear that they contribute to the SMSA's competitive disadvantage.

As a result of these trends and conditions it is apparent that the future of the industry (and manufacturing in general) in San Francisco will lie in relatively small-scale activities having a strong San Francisco market orientation.

d. Paper and Allied Products (SIC 26)

Employment in the paper industry in San Francisco declined from 1075 in 1962 to 634 in 1972. The decline was primarily due to the out-migration of two large establishments, which reduced the average number of employees per establishment from 37.1 in 1962 to 24.4 in 1972. The corresponding U.S. averages were 104.5 and 104.7 in 1962 and 1972, respectively.

In 1972 Envelope Manufacturing (SIC 2642) in San Francisco accounted for more than half of the industry's employment in the city; in the United States as a whole it accounted for only 3.6% of the industry's employment, and in California its share was 5.2% of the industry's employment. The high industry share in envelope manufacturing in the city reflects the relative competitive advantage enjoyed by this activity from a city location in comparison with the industry as a whole which realizes a considerable competitive disadvantage in San Francisco.

The relative advantage of envelope production in San Francisco can be explained by analyzing the factors which determine the location of various paper product activities. The various activities of the paper and allied products industry can be divided into three broad categories: pulp and various paper mills, converted paper products, and paperboard containers and boxes. Due to their raw material, high water usage, waste discharge, and land requirements, it is quite unlikely that paper mill activities would locate in San Francisco. A city location is therefore possible only for converted paper and paperboard activities which do not realize the same city disadvantages as paper mills.

The location of these activities is affected by two major factors: their "production" orientation and their "market" orientation. The high degree of production orientation for these activities is illustrated by the fact that most Sanitary Paper Products (SIC 2647) in the United States, for example, are manufactured and packaged in paper mills and associated facilities. The economies of product integration in such activities exceed those of a market location. The market orientation must be fairly high to overcome the production orientation. Paperboard Containers and Boxes (SIC 265) activities provide examples for such market orientation. It is common, for example, to find such activities near large food manufacturing locations.

The U.S. input-output tables provide the explanation to that phenomenon: the high share of the total output produced by the paperboard container and boxes industry which is sold to food manufacturers (28.3% of total output in 1967).

Given the factors which determine the location of paper activities, the significant economies of scale in the industry, and San Francisco's economic structure, envelope manufacturing is the only large-scale activity* which can enjoy a competitive advantage in the city -- the major source of that advantage being a distribution advantage realized by the proximity to the large number of small customers in the city.

*More than 250 employees.

The prospects for the future of the industry in San Francisco depend primarily on the general business climate for manufacturing in the city (tax structure, city services, labor relations, etc.). The city's economic structure per se does not indicate any likely significant growth or decline in employment.

e. Printing and Publishing (SIC 27)

Printing and publishing is the largest manufacturing industry in San Francisco accounting for about 18.8% of the sector's employment in 1972. The industry's share of manufacturing employment increases to 23.1% when administrative and auxiliary activities are excluded. The industry includes six three-digit industry groups with Newspapers (SIC 271) and Commercial Printing (SIC 275) accounting for 78% of the industry's employment in San Francisco in 1972. While newspaper printing activities' share of total printing and publishing employment in San Francisco is virtually equal to that in the nation as a whole (34.2% in the city versus 34.4% in the United States), the employment share of the commercial printing industry in the city is significantly higher than in the nation (43.8% versus 32.4% in 1972).

Employment in the industry declined from 12,217 in 1962 to 9997 in 1972. Most of the decline of 2220 jobs -- 1278 jobs -- took place in the newspaper printing industry, primarily as a result of the consolidation of the two major city papers in the 1960s. The other activities showing significant employment declines are Periodicals (SIC 272) - 286, Blankbooks and Bookbinding (SIC 278) - 307, and Printing and Trade Services (SIC 279) - 107. The only three-digit industry group showing a significant increase is Books (SIC 273) which realized a 37.7% increase in employment (from 575 to 792) between 1962 and 1972. The largest group -- commercial printing -- showed remarkable overall employment stability with virtually the same level of employment in 1972 (4377) as in 1962 (4352).

(1) Newspapers (SIC 271)

Newspaper printing is primarily a population support activity which takes place in or near the center of the city for which the papers are published. There are two major economic reasons for a central city location of these activities: the vertical links between the administrative and newsroom activities and actual printing activities, and the need to minimize the cost of citywide distribution and the time required for newspaper deliveries. These factors (to say nothing about image considerations which by themselves would call for a San Francisco location) virtually assure that the city will have a comparative advantage in local newspaper printing and a disadvantage for printing out-of-the-city papers. Employment in these activities will therefore be determined by technological changes and demand for San Francisco papers rather than comparative advantage considerations.

As a result of conflicting and offsetting trends, employment in the industry will probably not change significantly in the long run. Technological advances, on the one hand, are likely to reduce the amount of labor required for a given quantity of output, while increased demand due to growing Bay Area population combined with rising income and education levels will, on the other hand, increase the demand for newspapers.

(2) Commercial Printing (SIC 275)

Commercial printing in San Francisco accounted in 1972 for two-thirds of non-newspaper printing. The industry's employment in San Francisco (4377) accounted for 67.2% of total SMSA employment (6514) and for 15.7% of the industry's employment in the state (27,879). The high employment in commercial printing in San Francisco relative to the SMSA and the state clearly reflects the strong comparative advantage of the city in this industry.

Table II-11 presents employment and wage comparisons of the industry in San Francisco and selected areas. All of the cities included have a higher share of employment in the industry than the nation as a whole. The strong comparative advantages of cities in the industry are due to the locational requirements of the industry and the economic structure and function of San Francisco and similar urban centers.

The commercial printing industry is primarily a business oriented activity with a strong dependency on large urban center activities. Only 2.19% of total output of the industry in the United States in 1967 was used for personal consumption while 90.82% was used as intermediate output. The largest overall user of commercial printing in the United States is the Advertising (SIC 731) industry which "consumed" 41.6% of total commercial printing output in 1967. The second largest user, excluding publishing activities, is the FIRE sector which used 4.8% of total output. The advertising industry, on its part, sold 33.5% of its output to the FIRE sector which is its largest customer. The second largest customer of the advertising industry is the trade sector with 18.8% of the output going to retail trade and 12.3% sold to wholesale trade.

The input-output analysis reveals the major role played by the FIRE and trade sectors in determining commercial printing activities. In reality the importance of center cities for the commercial printing industry is greater than indicated by the percentage of FIRE and trade activities in center city versus non-center-city locations, the reason being the concentration of headquarters in center cities. The headquarters of the FIRE sector, for example, are likely to be more highly concentrated in such cities than are the entire sectorial activities. And these headquarters are those which generate commercial printing activities.

The city's functions and structure are thus the major reason for its comparative advantage in the commercial printing industry. A city location provides the firms in the industry with easier and greater access to their customers. The importance of such access is especially great for small firms. Small establishments generally depend to a much greater extent on easy access to markets than do large firms; this factor contributes to the city's locational advantage for commercial printing since the industry is basically an industry of small businesses. More than 80% of the establishments in the United States employ fewer than 20 people: the average number of employees per establishment in 1972 was 19.7, up 10.7% from 1962. This is a much lower number per establishment than for manufacturing as a whole which increased by 14.6% between 1962 and 1972 to 64.9 employees per establishment.

TABLE II-11

EMPLOYMENT AND WAGE COMPARISONS FOR THE COMMERCIAL PRINTING INDUSTRY
BETWEEN SAN FRANCISCO AND SELECTED AREAS - 1962 AND 1972

<u>Area</u>	<u>Employment</u>		<u>Percent Change Between 1962 & 1972</u>	<u>Average Annual Wage</u>	
	<u>1962</u>	<u>1972</u>		<u>1962</u>	<u>1972</u>
San Francisco	4,352 (20.6)*	4,377 (21.5)	0.6%	\$ 6,934	\$10,363
California	21,055 (13.0)	27,879 (14.5)	32.4	6,181	9,300
United States	299,808 (17.8)	341,940 (19.7)	14.1	5,811	9,099
Baltimore	3,365 (21.6)	3,176 (24.6)	-5.6	5,733	9,164
Boston (Suffolk County)	4,995 (21.5)	4,866 (27.3)	-2.6	5,732	8,625
St. Louis	5,836 (28.3)	3,484 (21.8)	-40.3	5,733	9,866

*Numbers in parentheses show average employment per establishment.

Source: Arthur D. Little, Inc., calculations based on data from County Business Patterns, 1962 and 1972.

As shown in Table II-11 the average number of employees per establishment in San Francisco is higher than in the nation and significantly higher than in the state as a whole. Commercial printing is actually the only significant manufacturing industry to show a higher average number of employees per establishment in San Francisco than in the United States.

The expected future growth of the sectors which generate the demand for commercial printing assures a continued comparative city advantage relative to the rest of the SMSA, the state, and the nation. The crucial question is: will that advantage increase, remain stable, or decline, and to what extent? This question is crucial because the city might retain a comparative advantage even after losing most of its employment. Recent trends indicate a decline in the city's comparative advantage and the firms' competitive advantage. Employment in the commercial printing industry in San Francisco has not grown, while showing significant gains in the state and in the nation. Although lower population and employment growth in San Francisco are contributing factors, they alone could not have been sufficient to prevent growth in the industry.

The increase in the number of large establishments in the United States and the out-migration of some such establishments from San Francisco indicate (a) a potential increase for competition from large out-of-the-region establishments and (b) a city locational disadvantage for large firms. Due to the factors discussed above, it is apparent that the declining competitive advantage for large establishments in the city is not due to market size considerations.

In order to better understand the reasons for that trend we conducted several interviews with firms in the industry and the manager of a trade organization. All of the persons interviewed cited labor relations as the major reason for the weakening competitive position of the industry in San Francisco. The strength of the six separate unions involved in the industry was cited as the major reason for the lack of employment growth in the city and for the out-migration of some large establishments. They emphasized that wages in the city are among the highest in the country and in some cases the highest in the industry at any location.

An additional factor mentioned in these interviews related to city and state taxes. The 1% payroll expense tax was claimed to add to the already high cost of production in the city, including the property tax. City taxes thus reduce the competitive advantage over the rest of the state. One firm supported this argument by mentioning that it once lost a city contract by \$100 to another firm in the state with the payroll expense tax accounting for more than the \$100 cost differential. In addition to city taxes, the 6½% state sales tax was mentioned as a disadvantage for San Francisco and other California firms in competing with out-of-state firms since customers apparently can avoid paying the state user taxes on such imports.

Each of the factors cited above, in addition to technological developments, might not be sufficient by itself to significantly reduce the competitive advantage of the industry in San Francisco. Taken together,

however, they do have a considerable impact on the industry in the city. Average city wages in manufacturing industries are generally higher than in most other cities in the nation, and it is therefore not surprising to find the same phenomenon in the printing industry (see Table II-11). Poor labor relations, or even the mere belief that they exist, are probably even more important in many cases than higher wages.

Although most establishments are small, technological advances increase the economies of large plants and the more land-intensive single-story buildings. An increasing scale of operations increases the firm's market area and reduces its requirements for access to city customers -- hence, a decline in the advantages associated with city location. City taxes increase the competitive advantage of out-of-the-city location while the sales tax adds slightly to the advantage of out-of-state firms.

Improved labor relations and some revision of the tax structure will induce modest employment gains in the industry. The lack of any action will probably result in significant employment declines as large establishments expand and leave the city.

(3) Other Printing and Publishing Industries (SIC 272, 273, 278, and 279)

The combined employment of all non-newspaper and non-commercial printing activities in 1972 accounted for about 20% of total printing and publishing employment in San Francisco. Their 1972 employment of about 2000 was 19.5% lower than in 1962. These activities are affected by the same factors affecting commercial printing activities. Since these activities -- Books (SIC 273) for example -- are less dependent on a city location than commercial printing, it is probable that in the long run their decline will be greater than that of commercial printing activities. Any gain in these activities is likely to be either temporary or simply reflect a switch by some establishments from commercial printing to other printing activities.

f. Chemicals and Allied Products (SIC 28)

Employment in the industry in San Francisco declined by 43.3% between 1962 and 1972. In 1972 the industry employed 1141 workers in the city. The decline actually took place during the 1962-1967 period; employment in 1968 was 1076 people. The elimination of 936 jobs between 1962 and 1968 is primarily due to the out-migration of a few large establishments including the only firm in the 250-499 employee category and two firms in the 100-249 category.

The major industry group in the city in 1972 was the Paints (SIC 285) industry which accounted for 541 jobs. Employment in the industry increased by about 14.1% between 1968 and 1973 although the number of establishments declined at the same time by about 21%. Wages in the industry are high, with the average wage in San Francisco being about the same as in the nation as a whole. The average wage data, however, are somewhat misleading since they are based on a different industrial and occupational mix. In paints, for example, wages in the city are about 15% higher than the national average.

The decline in San Francisco was not offset by growth in the rest of the SMSA, which declined by 5% during the 1962-72 period. Employment in the nation increased by 10.1% during the same period. The industry as a whole enjoys significant economies of scale, with most outputs having a national market area. The overall market orientation of the industry does not, therefore, favor a San Francisco location. A city location for most chemical industries is due primarily to historical reasons rather than an urban locational advantage. Small firms which serve primarily city customers are likely to stay in San Francisco and expand, with larger establishments moving out of the city. The likely net effect would be relatively small overall employment changes.

g. Fabricated Metal Products (SIC 34)

The fabricated metal products industry is primarily an intermediate output industry. More than 87% of its output in 1967 was sold to other industries. Most of the output is produced by large establishments which sell in the national market. Less than a quarter of the output is produced by a very large number of small establishments.

Table II-12 presents a comparison of the industry in San Francisco and selected areas. The 27.2% decline in San Francisco is due primarily to the out-migration of one large establishment (500 and over employee category) and a decline in the number of other larger-than-average establishments. Although employment in the state increased during the 1962-72 period at about the national rate, the SMSA lost about 1000 jobs due to the decline in San Francisco and only modest gains in the rest of the SMSA. Wages in the industry are relatively high, with those in San Francisco being much higher than in all other areas. The city is the only area showing a significant wage differential compared to the national average.

Considering the high city wages, high city taxes, and relatively low city market orientation of the larger establishments, it is apparent that the industry in San Francisco has an overall competitive disadvantage for most activities. The smaller and more specialized firms might actually enjoy a competitive advantage in the city due to their strong market orientation. Most of the larger establishments, however, remain in the city primarily because of their large fixed capital investments rather than a long-run competitive advantage. Our interviews with firms in the industry verified these conclusions and indicated a significant decline in the industry in the near future.

h. Machinery, Except Electrical (SIC 35)

Employment in the industry in San Francisco declined from 3099 in 1962 to 2039 in 1972. The 34.2% decline is significantly higher than in other cities with which the city was compared. The decline cannot be explained by significant wage differential as is the case in several other manufacturing industries. Although the average city wage was higher than in the nation (by 9.5% in 1972), it was slightly lower than in Boston, for example.

TABLE II-12

EMPLOYMENT AND WAGE COMPARISONS FOR THE FABRICATED METAL
PRODUCTS INDUSTRY BETWEEN SAN FRANCISCO AND SELECTED AREAS

Area	Employment		Percent of Change	Average Annual Wage	
	1962	1972		1962	1972
San Francisco	5,872	4,277	(27.2)%	\$6,563	\$11,624
San Francisco-Oakland SMSA	19,377	18,390	(5.1)	6,663	10,699
California	88,031	106,511	21.0	6,121	9,189
United States	1,062,096	1,312,595	23.6	5,671	8,840
Baltimore	9,593	7,039	(26.6)	5,888	9,231
Boston (Suffolk County)	5,784	5,555	(4.0)	5,687	9,365
St. Louis	12,559	14,772	17.6	5,666	9,396

Source: Arthur D. Little, Inc., calculations based on data from County Business Patterns, 1962 and 1972.

The major factors responsible for the industry's decline in San Francisco are (1) the lack of strong city market orientation of larger establishments which serve regional or national markets, (2) the internal growth of firms due to economies of scale, and (3) an overall city competitive disadvantage for relatively large establishments which are not city market oriented either in relation to their inputs (including labor) or their outputs.

The analysis of recent trends shows that the decline of the industry in San Francisco proceeds basically in a stepwise fashion. Large firms which expand their operations tend to relocate out of the city where land is cheaper and taxes are lower. When the firm serves a national market the new location might be an out-of-state location which will also reduce transportation costs. Small firms, on the other hand, are more likely to stay in the city until they expand and lose their competitive advantages from a city location. This process is illustrated in Table II-13.

TABLE II-13

EMPLOYMENT, ESTABLISHMENTS, AND EMPLOYEE-TO-ESTABLISHMENT
RATIOS IN THE MACHINERY (EXCEPT ELECTRICAL) INDUSTRY
IN SAN FRANCISCO FOR SELECTED YEARS

	<u>1962</u>	<u>1965</u>	<u>1967</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Total Employment	3,099	2,441	2,021	2,544	1,980	2,039	2,032
Number of Establishments	149	125	117	114	106	102	95
Employee-to- Establishment Ratio	20.8	19.5	17.3	22.3	18.7	20.0	21.4

Source: Arthur D. Little, Inc., calculations based on County Business Patterns, 1962 and 1973.

The decline in employment between 1962 and 1967 is the result of the decline in the number of larger-than-average establishments, which reduced the number of employees per establishment from 20.8 to 17.3. The increase in employment from 1967 to 1970 was due primarily to economies of scale in industry. The number of ~~employees per establishment~~ declined during that period while employment increased. The decline between 1970 and 1971 had the same causes as the 1962 to 1967 decline. The slowdown in economic activity between 1969 and 1971 merely accelerated the process.

The changes between 1971 and 1973 seem to be part of the overall trend of the more viable establishments expanding while the less profitable close down or leave the city. The prospects for the future are for a continuation of that trend of declining overall employment and number of establishments.

i. Transportation Equipment (SIC 37)

The transportation equipment industry in the United States includes six three-digit industry groups, the largest being Motor Vehicles and Equipment (SIC 371) which accounted for more than 48% of total industry employment in 1972. Aircraft-related Activities (SIC 372) accounted for more than 29% of total industry employment, and Ship and Boat Building and Repairing (SIC 373) accounted for less than 11% of the industry's employment.

In San Francisco the motor vehicles industry is very small and declining (453 employees in 1962 and 260 in 1972) while Ship Building and Repairing (SIC 3731) accounts for most of the employment (about 78% in 1972) in the sector. The decline in the transportation equipment industry in San Francisco (from 4063 jobs in 1962 to 1718 in 1972 and 1390 in 1973) is due to the decline in the ship building and repairing industry (from 3334 jobs in 1962, to 1337 in 1972, to 1056 in 1973). The 68.3% employment decline in San Francisco during the 1962-1973 period is not due to a national decline of the industry but to the industry's competitive disadvantage in the city. (Total U.S. employment during that period increased by 27.4%.)

By their very nature ship building activities are not city market oriented and their competition is worldwide. While the Merchant Marine Act of 1970 increased the competitive position of U.S. shipyards, it did not contribute to San Francisco's competitive position vis-a-vis the rest of the nation. The significantly higher average wages in San Francisco (26.3% higher than the national average in 1972) contribute to the city's disadvantage. With only minor and/or temporary exceptions, the industry in San Francisco is presently engaged in maintenance rather than ship building activities.

Our analysis of recent trends in San Francisco and the nation and the information obtained through selected interviews indicate a probable overall decline in employment with the possibility of significant fluctuations depending on the shipyards' success in obtaining future contracts.

j. Administrative and Auxiliary Activities in Manufacturing

Administrative and auxiliary activities are office space activities which are generally not directly related to the level of manufacturing activities at any specific location. Although some of the administrative and auxiliary activities of specific industries tend to locate close to the center of their manufacturing activities, most of them serve larger market areas and may locate at any place within a broad geographical area.

The major factors determining the specific location of these activities are the quality and cost of available office space, availability of labor, ease of access to transportation networks and the availability of communication facilities, availability of financial and business services, accessibility to related activities, local taxes, and locational amenities. Traditionally cities had a strong competitive advantage in satisfying these

locational requirements. However, population shifts and the development of the non-center-city metropolitan areas have reduced the competitive advantage of cities, although not to the extent of entirely eliminating these advantages.

Administrative and auxiliary employment in San Francisco and the rest of the SMSA reflects these trends. These activities in San Francisco provided 9927 jobs which accounted for 18.7% of total manufacturing employment in the city. This is a much higher percentage than in the nation as a whole (5.5% in 1972), reflecting the city's competitive advantage as a location for such activities. That advantage is, however, declining relative to the rest of the SMSA. In 1962 employment in the city accounted for 71.8% of total SMSA employment while in 1972 it accounted for only 52.5% of SMSA employment. The decline in the city's share was due to significant growth in the rest of the SMSA rather than to an absolute decline in San Francisco. Employment in the city actually increased during the 1960s, from 5353 in 1959 to 11,405 in 1970. The decline in the early 1970s (9927 in 1972 and 9643 in 1973) reflects the city's weakening competitive advantage for office space activities for which the city orientation is not sufficiently strong to offset the higher rents, taxes, etc.

2. Transportation, Communications, and Utilities •

The TCU sector includes a variety of activities, some of which are consumer oriented (such as local passenger transit) and others which are business oriented (e.g., water transportation, etc.). Although declining in some activities, San Francisco has shown considerable strength in most TCU activities resulting in a higher relative overall sectorial growth than the nation and all the other urban centers with which the city was compared. Total employment in the sector* increased from 41,800 in 1962 to 50,608 in 1973. Prospects for future growth differ for the various activities. Some are expected to grow significantly while others are likely to decline. The sector as a whole is expected to grow, although probably at a lower rate than during the 1962-73 period.

a. Local and Interurban Passenger Transit (SIC 41)**

Employment in the industry increased by 15.2% between 1962 and 1973, as the result of increased demand for passenger transit by a growing number of commuters and visitors. The industry's employment share is significantly higher than in the United States as a whole ($LQ_1 = 2.2$, $LQ_2 = 4.3$) and in most other urban centers.

b. Trucking and Warehousing (SIC 42)

Employment in the industry remained stable during the 1962-73 period (in 1962 the industry employed 6192 persons; in 1973 it employed 6149). While total employment remained constant, its distribution among four-digit

*Employment data are based on CBP data which exclude railroad employment found in SIC 40. According to our interviews, total railroad employment in San Francisco, which is mostly engaged in office space activities, is approximately 4250.

**The available data include only private sector employment. Public sector employment is included in the governmental sector.

SIC activities of which the industry is composed did change during that period. Trucking without Storage (SIC 4211) declined slightly (from 4619 in 1962 to 4506 in 1973) while Local Trucking and Storage (SIC 4214) increased from 471 employees in 1962 to 747 in 1973. The increase in the latter was apparently at the expense of General Warehousing and Storage which declined from 768 to 568 during the same period.

The trucking and warehousing industry is primarily an intermediate output industry. In the United States as a whole only 16.8% of the total value of the 1967 output of the industry was used for personal consumption. The largest industrial user of the industry's output, except the industry itself, is the food manufacturing industry which used 8.5% of the output. The second largest user is the wholesale trade sector with 5.1% of output. Water transportation activities in the United States used only 0.6% of the 1967 output. In San Francisco the distribution is somewhat different primarily due to port activities which increase significantly the share consumed by the water transportation industry.

Based on recent trends, the expected growth or decline of the sectors which determine the demand for the industry's output, technical developments, and ADL interviews, it is probable that employment in San Francisco will decline by an average of about 10% during the next 10-20 years.

c. Water Transportation (SIC 44)

Water transportation activities are port related and depend on the competitive position of the San Francisco port vis-a-vis the rest of the Bay Area and the entire Pacific region. Employment in the industry increased slightly during the 1960s (from 9095 in 1962 to 9391 in 1970), but declined significantly in the early 1970s (from 9095 in 1970 to 7194 in 1973). Wages remained considerably higher than the United States as a whole and in other industries, reaching an average annual wage of about \$13,000 during the first quarter of 1973 compared with \$8,000 for the United States.

Our trend analyses of port activities and the port's competitive position vis-a-vis the rest of the region were severely handicapped due to the lack of reliable and comparable data. The U.S. Department of Commerce and the U.S. Army Corps of Engineers publish data which are based on U.S. Customs district records. These publications contain considerable amounts of data which could be used for trend analysis and projections.* The problem is that the data are apparently unreliable and therefore useless as a basis for our study.

The major problem lies not in the absolute discrepancies between Customs data and Port Commission data, but rather in the inconsistency of the discrepancies.

*The U.S. Army Corps of Engineers' projections are based on these data.

Table II-14 presents a brief illustration of the contradiction between the two data sources. The Department of Commerce and the Corps of Engineers' data are virtually identical since they are based on the same data source. They do, however, show entirely different values from the Port Commission's data and what is much worse, show conflicting trends. The Port Commission's data, for example, show an 8.2% decline in foreign trade tonnage between 1965 and 1973 while the Department of Commerce shows an increase of 47.5% during the same period with an even larger discrepancy between figures for imports alone (-24.6% versus +45.4%).

The huge yearly fluctuations and the overall trends indicated by the Customs data are inconsistent with our employment data and the port experience. We therefore accept the Port Commission's contention that these data do not represent actual port performances.

Due to the lack of more detailed and reliable data and the scope of the present study, our analysis can provide only gross estimates of probable future employment in the industry.

Based on past trends, technological developments, and expected national growth, we expect total employment in the industry to be between 5500-8500 by the end of the century. It should be re-emphasized that these values represent a likely range rather than actual projections.

d. Transportation by Air (SIC 45)

Air transportation activities grew at a very rapid rate during the 1960s. Employment in the industry in San Francisco increased by more than 100% during that period (from 2748 in 1962 to 5521 in 1970) and then declined gradually in the early 1970s (the 1973 employment of 4814 is 12.8% lower than in 1970). The industry's level of activity depends on a variety of factors. They include the city's position as a major tourist and convention center, the city's financial and business activities, Bay Area population and income, national income and income elasticity of air transportation activities, and the city's competitive advantage as the regional center for air transportation activities.

Projected growth in national income, the city's business sector, and visitor activities is expected to stimulate considerable growth in the industry's level of activity. Technological developments (such as national reservation centers), however, are expected to reduce the employment-to-activity ratio in San Francisco, resulting in a lower employment rate of growth. It is expected that overall employment will increase by an average of 25-30% during the next 10-25 years.

e. Transportation Services (SIC 47)

The transportation services industry is primarily an intermediate output industry. In the United States as a whole only 7.9% of the total value of the industry's 1967 output was sold directly for personal consumption. The air transport industry is the principal buyer of the industry's

TABLE II-14

IMPORT-EXPORT DATA COMPARISON FOR SELECTED YEARS
(thousands of short tons)

	<u>San Francisco Port Commission</u>		<u>U.S. Department of Commerce*</u>		<u>U.S. Army Corps of Engineers</u>	
	<u>Imports</u>	<u>Exports</u>	<u>Imports</u>	<u>Exports</u>	<u>Imports</u>	<u>Exports</u>
1965	1,416	1,809	1,202	793	1,075	794
1970	1,029	1,476	1,090	790	1,090	793
1972	1,088	1,527	1,550	650	1,484	650
1973	1,068	1,893	1,748	1,195	N.A.	N.A.

N.A. = Not available.

*Department of Commerce data given in pounds have been converted to short tons.

Sources: San Francisco Port Commission; U.S. Department of Commerce, U.S. Foreign Trade Waterborne Exports and General Imports; U.S. Army Corps of Engineers, U.S. Waterborne Commerce.

services, accounting for 22.4% of total output in that year. The second largest user of the output is the trucking and warehousing industry (21.4% in 1967). Water transportation activities ranked third, accounting for 12.2% of output and the real estate sector ranked fifth, accounting for 8.9% of the industry's output.

Employment in the industry in San Francisco increased by 71.6% between 1962 and 1970 and by an additional 7.6% between 1970 and 1973. Based on the expected growth of the various industries which determine the demand for transportation services and the industry's competitive position in the city, we expect no significant change in overall employment during the next 10-25 years.

f. Communications (SIC 48)

Employment in communications increased from 11,257 in 1962 to 17,358 in 1970 and then declined to 16,186 in 1972 and 15,492 in 1973. Two companies (PT&T and AT&T) account for virtually all the employment in the industry. Based on our interviews and trend analysis, we expect employment increases of 1500-3500 by the year 2000.

g. Electric, Gas, and Sanitary Services (SIC 49)

Recent CBP publications do not disclose the industry's employment in the city. Data manipulation provides an estimate of about 7000 employees in 1973 compared with 5600 in 1962. Most of the employees are engaged in office space activities. Although future growth depends primarily on the decisions of one company, we expect employment to increase by approximately 2000-3000 by the end of the century.

3. Wholesale Trade (SIC 50)

According to CBP data, employment in the wholesale trade sector declined from 44,240 in 1962 to 40,482 in 1973. Other data sources show an even larger decline than CBP. State of California Employment Development Department estimates, for example, show a decline from 46,400 in 1962 to 37,700 in 1973. The sector's decline in the city was more than offset by its growth in the rest of the SMSA, resulting in a net increase of approximately 13,000 jobs in the SMSA during that period.

The decline in the city reflects a weakening in the city's competitive advantage vis-a-vis the rest of the SMSA and the nation. The decline in the city's competitive advantage is due to the same general factors which produced a competitive disadvantage in the manufacturing sector as a whole -- i.e., population shifts, economies of scale, cost of land, taxes, etc. There is, however, a major difference between the impact of these factors on the manufacturing sector and their impact on the wholesale trade sector. In manufacturing the impact was to increase the city's overall competitive disadvantage while in wholesale it only reduced the city's competitive advantage. Even after the recent declines in sectorial activities, the city still remains a major wholesale center in comparison to the rest of

the SMSA, the nation, and other similar urban centers. Based on recent trends in the city and other similar urban centers, the sector is expected to continue to lose its competitive advantage and decline by approximately 20% by the end of the century.

4. Retail Trade (SIC 52-59)

The retail trade sector is primarily engaged in population support activities. These activities account for more than 70% of total retail employment in the city.

Three major factors determine retail trade activities in the city: city population size and income, number of out-of-town commuters and visitors and their expenditure patterns, and the city's ability to provide attractive specialized retail activities. Offsetting trends in population on the one hand, and income, in-commuters, and visitors on the other hand, have resulted in overall stability in retail employment since 1958.

Future growth of the retail sector depends on the factors mentioned above with the major unknown being future population growth or decline in the city. The state's Department of Finance has prepared several alternative population projections for California counties. The lowest population projections (Series E-0) estimate that the city's population will decline to 599,500 by the year 2000. The highest projections (Series C-150) estimate the population at that time to reach 717,800. Even if we assume a significantly smaller range, it is apparent that the potential for significant population changes is considerable.

Since retail trade is primarily a population support sector, its future will depend largely on what will actually be the rate of population growth or decline in the city. Depending on that crucial factor we expect employment in retail trade to be between 55,300 and 65,600 in the year 2000. Translated to percentage change this implies a range of between 3.43% decline and 14.46% increase over the sector's 1973 employment level of 57,264. The impact will be relatively larger in residential areas than in the downtown area since the latter is relatively less dependent on city population per se than the former. In addition, purely population support activities such as food stores are more sensitive to population changes than the more visitor oriented activities of eating and drinking places.

5. Finance, Insurance, and Real Estate (FIRE)

The FIRE sector in San Francisco has shown a considerable and continuous competitive advantage over the rest of the region and the nation. The city's comparative advantage in these activities is a direct result of San Francisco's historical development and its present economic structure and functions. The higher than average rate of growth of the sector in San Francisco increased its employment share in the city to 12.8% of total 1973 employment (or 14% of total wage and salary employment). The city population-per-employee ratio in the sector is among the lowest in the world. In 1962, the number of residents per employee was 14 for San Francisco and 62 for the United States as a whole. In 1972 the ratio

declined to 55 in the United States and to 10 in San Francisco. Of all the other urban centers the city was compared with, only Boston had a similar ratio (15 in 1962 and 10 in 1972).

The two-digit sectorial composition in San Francisco differs from that of all other areas including Boston. The largest industry group in 1962 in the city was that of Insurance Carriers (SIC 63) which accounted for 36.9% of sectorial employment. The second largest group in 1962 was Banking (SIC 60) which accounted for 29.4% of sectorial employment. During the 1962-1973 period, insurance carriers employment in the city declined from 19,022 to 17,791, while employment in banking increased from 15,149 to 26,512. As a result, banking activities became the predominant industry in the sector, accounting for 39.2% of total sectorial employment in 1973.

The continuous competitive advantage of the city in banking activities is reflected by the outstandingly low residents-per-employee ratios in San Francisco in comparison with other areas. The number of residents per banking employee in San Francisco was 50 in 1962 and 30 in 1972. The corresponding values in the United States were 270 and 190, and in Boston, 60 and 45.

While wages in the FIRE sector in San Francisco are higher than in the United States, they are about equal to those in other urban centers (in 1972 the average annual sectorial wage in San Francisco was \$8,992 compared with \$7,814 in the United States and \$8,947 in Boston).

The city's economic structure and the importance of agglomeration effects in sectorial activities indicate continuous growth to a probable employment level of 100,000-110,000 in the year 2000. It is expected that banking activities will account for most of the future sectorial growth and thus increase their sectorial employment share to more than 50% by the end of the century.

6. Services

The services sector includes a variety of activities, some of which are population oriented (such as personal services) while others are either business oriented or tourist oriented (business services and hotels, for example). Due to the decline in the city's population, employment in population support activities increased at a much lower rate than was the case in business oriented activities, with one notable exception: Medical and Other Health Services (SIC 80), which increased by 57.9% during the 1962-73 period (from 11,555 to 18,243). Personal Services (SIC 72) realized an employment decline during the same period, from 6512 to 5229. It is interesting to note that the 1283 decline in employment between 1962 and 1973 was due almost entirely to a single three-digit personal services industry -- Laundries and Dry Cleaning Plants (SIC 721) -- in which employment declined by 1231 during the same period (from 3072 in 1962 to 1841 in 1973).

The largest two-digit service industry in San Francisco is the Miscellaneous Business Services (SIC 73) industry. Its employment increased by 96% between 1962 (12,495 employees) and 1973 (24,491); its share of total sectorial employment increased from 18.9% to 23.3%. The very high rate of growth of the industry in San Francisco is due to the high growth of the entire business sector (FIRE included) and the city's competitive advantage in the industry. While personal services in the city tend to show significant overall similarity to personal services in the rest of the SMSA, business services in San Francisco are quite different from those in the rest of the SMSA. The 1972 U.S. Census of Business shows a sales per establishment value of \$34,200 in personal services in San Francisco and a \$32,200 value for the rest of the SMSA. The corresponding values for business services emphasize the different nature of these activities in San Francisco and the rest of the SMSA: these values are \$221,100 for San Francisco establishments and \$83,000 for the rest of the SMSA establishments. The 1972 ratio between sales per establishment in San Francisco and the rest of the SMSA (2.66) is actually higher than the ratio in 1963 (2.11). In other words, sales per establishment in business services in the city have grown at a higher rate during the 1963-72 period than in the rest of the SMSA.

The third largest industry group in the sector is Nonprofit Membership Organizations (SIC 86) which accounted for 13.1% of total sectorial employment in 1973. Employment in the industry grew by more than 56% between 1962 and 1973 (from 8843 to 13,812). The fourth largest service industry is Hotels and Other Lodging Places (SIC 70) which accounted for 10.9% of sectorial employment in 1973. Employment in these activities increased by 39.5% during the period (from 8246 to 11,500). The significant employment growth in the industry reflects the continuous attraction of the city as a major convention and tourist center and to a much lesser degree the business sector's vitality in San Francisco.

Employment in the services sector is expected to grow at a much higher than average rate with business services, medical services, and educational services accounting for about 70% of future growth. Total sectorial employment is expected to grow by about 60,000 jobs to between 157,000 and 173,000 workers in the year 2000.

7. Government

Government employment in San Francisco has grown from 74,500 in 1962 to 87,000 in 1973 according to California Employment Development Department statistics. The 11-year period is not characterized by steadily increasing employment but rather by yearly increases in employment from 1962 to 1969 when employment reached 93,500, followed by a constant decline to the 87,000 employed in 1973.

In order to obtain continuous information over a significant period of time, the California Employment Development Department's Estimated Nonagricultural Wage and Salary and Agricultural Employment, San Francisco County was used as the basis for the employment projections. A more complete breakdown into federal, state, and local categories of government

entitled California Employment and Payrolls (also published by EDD) was available, but the more complete breakdown has only been available since 1972. Two additional difficulties are:

- The figures given for total government employment differ significantly in the two publications.
- The statistics are based on persons receiving unemployment insurance coverage, which before 1972 was not extended to employees of nonprofit organizations; civil service employees of the state; employees of state hospitals, state colleges, and the University of California; classified employees of school districts; and employees of counties and local government subdivisions (who may now request coverage if they so desire).

Even with a constant employment decline since 1969, government is still the second largest sectorial employer in San Francisco. Its share of total employment in the county was 17.6% in 1972 (compared to 19.5% in services).

Government employment is projected to increase to between 95,000 and 110,000 by 1985 and to between 105,000 and 125,000 by the year 2000. The projections are based on the long-term trend from 1962 to 1973 rather than on the recent decreases in employment. The recent decline in employment is taken to be a moderating influence on employment growth rather than a continuing trend.

D. PROJECTIONS OF FUTURE EMPLOYMENT BY INDUSTRY

The employment projections, by definition, do not pretend to predict the actual levels of employment, but rather project trends by utilizing the most relevant projection techniques available in order to estimate future employment based on all available data on past performance and future economic trends. In other words, the question which they intend to answer is: what are the expected levels of employment in San Francisco in 1985 and 2000 if present policies remain unchanged? In reality, the actual levels of employment, of course, depend on any changes in existing policies as well as any other unforeseen changes in national and regional economic conditions. The importance of the projections lies in their ability to inform the policy maker of the probable outcomes of present policies and trends and of the expected pressures which should be anticipated, and to advise that present conditions such as land use, traffic congestion, labor availability, etc., are all susceptible to resulting impacts.

1. Methodology

The employment projections were derived through a process which included the following analytical steps:

a. Trend Projections

The trend projections for each two-digit industry* were based on (1) employment trends between 1962 and 1973 including cyclically adjusted trend reversals wherever appropriate, (2) national growth projections by industry, and (3) population projections.

b. Economic Functions and Industrial Structure Analysis

The economic function and industrial structure of San Francisco were analyzed in order to determine their competitive advantage in the various economic activities comprising the city's economy. The analysis was designed to determine probable future trends resulting from the city's function as a major regional urban center based on national trends of similar urban centers and on regional trends.

c. Industrial Interrelationships Analysis

The industrial interrelationships analysis was based on the structural analysis and input-output relationships. It was utilized in identifying the most crucial "multiplier" effects of major projected changes in economic activities and checking the projections for inter-industrial consistencies.

d. Employment Projections

The employment projections were derived through a process of integrating and reconciling the results of the analysis outlined in steps a, b, and c based on an industry-by-industry judgment.

e. Selected Interviews

ADL conducted selected interviews with various firms, trade associations, and institutions. The interviews included questions concerning the past growth and future prospects of the major industries in San Francisco. The analytical interpretation of the information obtained through these interviews revealed no contradictions with our projections, with only one exception. The exception concerns our employment projections for Medical and Other Health Services (SIC 80). Although no specific numbers were mentioned it is apparent that the health administrators interviewed expect significantly lower employment growth than indicated by our analysis. We suspect that the rather conservative expectations of those interviewed reflect present conditions rather than long-range trends. Since our projections concern long-term growth rather than short-term adjustments, we have decided not to revise our projections which were based on past trends and expected long-term growth of health delivery systems in the nation.

The sectorial employment projections presented in Table II-15 include average, low, and high projections for 1985 and 2000. The low projections for each sector were derived by summing up the low projections for the

*Trend projections were made for each two-digit industry with the following exceptions: (1) construction, agriculture, forestry, fishing, and government for which only sectorial trends were analyzed; and (2) wholesale trade for which the projections were made on the three-digit level.

TABLE II-15

CIVILIAN EMPLOYMENT OF SAN FRANCISCO -
1970 AND 1973 AND PROJECTED 1985 AND 2000
(in thousands)

SIC Code	Industry	Actual			Projected					
		1970		1973	1985			2000		
					Average	Low	High	Average	Low	High
	Total Employment	535.2		528.5	595.0	550.0	640.0	657.5	605.0	710.0
	Wage and Salary Workers	489.4		483.4	546.1	505.3	587.0	604.8	556.6	653.1
7-14	Agriculture, Forestry, Fisheries, and Mining	0.9	0.6		0.6	0.3	0.9	0.6	0.3	0.9
15-17	Contract Construction	19.9*	19.4		20.5	18.7	22.2	21.0	17.5	24.5
19-39	Manufacturing	58.9	54.0		49.5	43.0	56.0	46.4	39.2	53.7
41-49**	Transportation, Communica- tions, and Utilities	53.1	50.6		54.9	50.5	59.3	57.0	51.7	62.3
50	Wholesale Trade	43.2	40.5		35.1	31.7	38.6	32.5	29.0	35.9
52-59	Retail Trade	58.3	57.3		58.5	53.5	63.6	60.4	55.3	65.6
60-67	Finance, Insurance, and Real Estate	65.6	67.7		86.6	82.2	91.0	105.0	100.0	110.0
70-89	Services	97.1	105.1		136.6	129.4	143.6	165.4	157.5	173.2
91-93	Government	91.5	87.0		102.5	95.0	110.0	115.0	105.0	125.0
	Unclassified Establishments	0.9	1.2		1.4	1.0	1.8	1.5	1.0	2.0

*The EDD figure was used for Contract Construction since the County Business Patterns figure was considered to be nonrepresentative.

**SIC 40 is excluded since County Business Patterns excludes railroad employees.

Sources: County Business Patterns, 1970 and 1973; Arthur D. Little, Inc., projections; and State of California Employment Development Department for Government.

various activities in each sector; the high projections were derived by summing up the high projections for these activities. The range between the low and high projections represents the most likely employment range for the sectors (or activities) in 1985 and 2000. Some sectors and activities show significantly larger ranges of probable future employment than do others. This is due primarily to the lower degree of trend stability shown by these activities.

2. Projected Overall Employment in San Francisco

Total employment in the city is projected to increase by 1985 to 595,000, an increase of 67,000 jobs, under the average projection. Actual employment could range from 555,000-640,000 jobs depending on the rate of attrition of employment in manufacturing and the rate of growth in FIRE and services. The projected range for the year 2000 is from 605,000 to 710,000 with an average level of employment of 657,500 for a total increase of 129,000 jobs in the city; however, growth could range from an additional 77,000-181,000 jobs. The wide range in net new employment results from the combination of possible losses in certain sectors and possible gains in others. Projected change in FIRE is in a narrower range than in the other industry groups. Wide variations in projected growth in services, government, and retail trade are largely a reflection of variations in future resident population. Manufacturing also accounts for a large share of the wide variation in total employment projections because of uncertainty regarding rates of decline of specific industries and the behavior of large employers.

3. Projected Employment in Manufacturing

Total employment in manufacturing will decline by the end of the century under all projections. The high projection, however, shows a 2000 increase between 1973 and 1985 followed by a 2300 decline between 1985 and 2000. The low employment projection shows an employment decline of 11,000 by 1985 and an additional decline of 3800 from 1985 to 2000. The average projections show an employment decline of 4500 between 1973 and 1985 and an additional decrease of 3000 jobs by the year 2000. The wide range between the high and low projections shows this sector's susceptibility to enormously varying employment in the future compared with most other sectors. Much of the projected decline is expected to occur in the food, metal products, machinery, and transportation equipment industry groups. (See Table II-16.)

a. Food and Kindred Products

This industry is likely to experience a relatively high rate of decline in employment over the next decade and 25 years. Even under the high projection, significant declines would occur. Total employment in the industry is expected to drop from 7800 to 6600 by 1985 and to 5750 by the year 2000 using the average projections.

TABLE II-16

EMPLOYMENT IN THE MANUFACTURING INDUSTRY OF SAN FRANCISCO -
1970 AND 1973 AND PROJECTED 1985 AND 2000

SIC Code	Industry	Actual		Projected			
		1970	1973	1985		2000	
				Average	Low	Average	Low
	Total Manufacturing	58,911	54,032	49,500	43,000	56,000	39,200
20	Food and Kindred Products	8,532	7,768	6,600	6,000	7,200	5,000
22	Textile Mill Products	288	511	500	300	700	300
23	Apparel and Other Textile Products	8,132	9,376	9,250	8,500	10,000	8,000
24	Lumber and Wood Products	301	297	150	0	300	0
25	Furniture and Fixtures	1,196	1,212	1,150	900	1,400	700
26	Paper and Allied Products	772	651	600	400	800	400
27	Printing and Publishing	10,874	10,173	10,000	9,500	10,500	9,500
28	Chemicals and Allied Products	1,276	1,279	1,250	1,100	1,400	1,100
30	Rubber and Plastics Products	244	447	600	500	700	500
31	Leather and Leather Products	326	330	300	200	400	200
32	Stone, Clay, and Glass Products	319	250	100	0	200	0
33	Primary Metal Industries	574	740	650	500	800	500
34	Fabricated Metal Products	5,581	4,464	3,750	3,000	4,500	2,500
35	Machinery, except Electrical	2,544	2,032	1,250	1,000	1,500	1,000
36	Electrical Equipment and Supplies	2,119	2,220	1,750	1,500	2,000	1,000
37	Transportation Equipment	2,504	1,390	1,250	500	2,000	500
38	Instruments and Related Products	210	299	500	400	600	400
39	Miscellaneous Manufacturing Industries	1,116	950	850	700	1,000	600
	Administrative and Auxiliary	11,405	9,643	9,000	8,000	10,000	7,000

Sources: County Business Patterns, 1970 and 1973; Arthur D. Little, Inc., projections.

b. Textile Mill Products

This industry accounts for only 500 jobs at present and may experience gains or losses. The industry is expected generally to remain stable.

c. Apparel

This industry has shown significant gains in the past few years and may be expected to remain relatively stable, barring unforeseen changes in the industry. Employment could increase by 600 or decline by 900 jobs by 1985.

d. Lumber and Wood Products

This industry represents only 300 jobs and is expected to continue to decline. The average employment through the year 2000 is projected at 150 with a range from 0-300.

e. Furniture and Fixtures

This industry represents employment of 1200 persons and is likely to remain fairly stable, with some decline probable through the year 2000 and a spread of 700-1400 employed in 2000. Significant percentage losses could occur, however, as a result of relocations.

f. Paper and Allied Products

This industry accounts for about 650 jobs and is expected to be relatively stable at that level. An increase or decline of about 200 jobs could occur.

g. Printing and Publishing

This large industry is expected to remain stable at about 10,000 jobs plus or minus 500 in 1985 and 2000.

h. Chemicals and Allied Products

This industry has had fairly stable employment of about 1300 and is not expected to grow or decline significantly.

i. Rubber and Plastic Products

This is one of the few manufacturing sectors in the city expected to grow in the future. However, total employment is only about 450 at present and the absolute increases expected will only range from 150-250 jobs.

j. Leather and Leather Products

This industry accounts for just over 300 jobs and is likely to remain stable at that level. An increase or decline of 100 jobs could occur.

k. Stone, Clay, and Glass

This industry now represents only 250 jobs and is expected to continue to decline. Employment is likely to fall to 100 and could disappear almost totally.

l. Primary Metals Industries

Employment in this industry has recently risen to 750 but is projected over the long run to fall back to an average level of about 650 with a range of 500-800.

m. Fabricated Metals Products

This major industry is expected to account for a substantial share of the decline in manufacturing employment. It is projected to decline from 4500 jobs to 3750 by 1985 and to 3250 by 2000. Some of this decline has already occurred or is known to be coming this year. Declines could be more severe under the low projection, with a loss of 1500 jobs by 1985 and an additional 500 by 2000. Under the most favorable outlook, the industry's employment would only remain stable.

n. Machinery, Except Electrical

Employment in this industry, currently at about 2000, is expected to drop to 1250 and remain fairly stable at that level. At best, a loss of 500 jobs is expected. The low projections show a decline of 1000 jobs.

o. Electrical Equipment and Supplies

Despite small increases recently, the long-run prospects are for a decline of 500 jobs in electrical equipment manufacturing by 1985 and 500 more by 2000. The low projections increase this decline to 750 by 1985 and 1250 by 2000.

p. Transportation Equipment

Employment may fluctuate considerably in this industry as a result of changes in ship building and repair activities. Total employment is projected to decline slightly from 1400 to 1250 by 1985 with a wide range of 500-2000 jobs in that year and in 2000. Employment could decline more severely or increase depending on the decisions of major employers in this industry. Reactivation of the U.S. Naval Shipyard would have a dramatic effect on employment in this industry.

q. Instruments and Related Products

This growth industry is expected to show some gains in employment in San Francisco as well. Total employment, now at about 300, is expected to increase to 500 and could range as high as 600-700 by the year 2000.

r. Miscellaneous Manufacturing

A continued decline in this group of manufacturers is expected as a result of declines in the major industries. From 100-250 jobs may be lost over the next 10-25 years.

s. Administrative and Auxiliary

Manufacturers administration and auxiliary employment at headquarters offices, sales offices, and support offices is projected to decline slightly as a result of declines in production activities in the city. The average decline is 400 by 1985 or 1400 by 2000, however, it could be as great as 1600 by 1985 and 2600 by 2000. Projection of employment in this sector is made especially difficult since the locating of a few headquarters offices in the city could increase employment substantially.

4. Transportation, Communications, and Utilities

Employment in this industry group is expected to increase by more than 4000 jobs by 1985 and by more than 6000 jobs by 2000 under the average projections (Table II-17). Total employment could be greater or less depending on the rates of decline in employment in trucking and warehousing and water transportation or growth in communications and utility services.

Most of the growth under all projections is in communications, electric, gas, and sanitary services, and local and interurban passenger transit.

Water transportation, that sector involving port activity, is projected to remain stable, with variations possible of 1000-15000 jobs in either direction. Trucking and warehousing employment is projected to decline under all projections by up to 1100 jobs. Increases are projected for air transportation services and other transportation services, chiefly as a result of increased business and resident demand.

5. Wholesale Trade

Severe drops in wholesale trade employment are expected to occur over the next 10 years and beyond. Total employment is projected to drop by 5300 jobs by 1985 and by an additional 2700 jobs by 2000 (Table II-18). Much lower employment could result from continued decline of the industry. Leading the decline is employment in grocery, electrical goods, and miscellaneous wholesaling. Significant declines are also expected in hardware, plumbing and heating equipment, and in machinery equipment wholesaling. Dry goods and apparel wholesalers, motor vehicles, and drugs and chemicals are expected to be relatively stable. The largest decline will be in grocery wholesaling, a reflection in part of the tendency of large food chains to handle their own purchasing directly from manufacturers and growers.

TABLE II-17

EMPLOYMENT IN THE TRANSPORTATION, COMMUNICATIONS, AND UTILITIES INDUSTRY OF SAN FRANCISCO -
1970 AND 1973 AND PROJECTED 1985 AND 2000

SIC Code	Industry	Actual		Projected					
		1970	1973	1985			2000		
				Average	Low	High	Average	Low	High
	Total Transportation, Communi- cations, and Utilities*	53,105	50,608	54,900	50,500	59,300	57,000	51,700	62,300
41	Local and Interurban Passenger Transit	5,696	5,736	6,500	6,000	7,000	6,650	6,000	7,300
42	Trucking and Warehousing	6,324	6,149	5,500	5,000	6,000	5,500	5,000	6,000
44	Water Transportation	9,391	7,194	7,000	6,000	8,000	7,000	5,500	8,500
45	Transportation by Air	5,521	4,814	6,000	5,500	6,500	6,250	5,500	7,000
47	Transportation Services	3,209	3,452	3,400	3,000	3,800	3,600	3,200	4,000
48	Communications	17,358	15,492	17,000	16,000	18,000	18,000	17,000	19,000
49	Electric, Gas, and Sanitary Services	5,606	7,771	9,500	9,000	10,000	10,000	9,500	10,500
	Administrative and Auxiliary								

*Railroad employees (from SIC 40) are not included.

Sources: County Business Patterns, 1970 and 1973; Arthur D. Little, Inc., projections.

TABLE II-18

EMPLOYMENT IN THE WHOLESALE TRADE INDUSTRY OF SAN FRANCISCO -
1970 AND 1973 AND PROJECTED 1985 AND 2000

SIC Code	Industry	Actual			Projected			
		1970	1973	Average	1985		2000	
					Low	High	Low	High
	Total Wholesale Trade	43,163	40,487	35,150	31,700	38,600	29,000	35,900
501	Motor Vehicles and Auto- motive Equipment	1,811	1,897	1,750	1,500	2,000	1,500	2,000
502	Drugs, Chemicals, and Allied Products	1,460	1,339	1,300	1,100	1,500	1,100	1,500
503	Dry Goods and Apparel	1,244	1,206	1,250	1,100	1,400	1,100	1,400
504	Groceries and Related Products	6,048	5,848	5,000	4,500	5,500	4,000	5,000
505	Farm Product Raw Materials	190	135	100	0	200	0	200
506	Electrical Goods	3,923	3,002	2,000	1,500	2,500	1,500	2,500
507	Hardware, Plumbing, and Heating Equipment	1,683	1,672	1,250	1,000	1,500	800	1,300
508	Machinery, Equipment, and Supplies	8,786	7,674	7,000	6,500	7,500	6,000	7,000
509	Miscellaneous Wholesalers	13,652	13,768	12,000	11,500	12,500	10,500	11,500
	Administrative and Auxiliary	4,366	3,946	3,500	3,000	4,000	2,500	3,500

Sources: County Business Patterns, 1970 and 1973; Arthur D. Little, Inc., projections.

6. Retail Trade

Employment in retail trade is expected to increase slightly by 1985 with more significant gains possible by the year 2000, depending on population changes in the city and, to a lesser extent, on increased overall employment and tourism (Table II-19). The largest projected increase is in eating and drinking places employment, as a result of increased employment in the city and increased tourism. This sector is expected to account for more than 100% of the net increase for the entire industry group, offsetting declines which are expected to occur in employment in general merchandise, automotive dealers, furniture and home furnishings, and building materials. Employment in food stores is also expected to increase, but by a much lesser amount.

By 1985, it is expected that more than 35% of employment in retail trade will be in eating and drinking places. Increases in other sectors will depend chiefly on whether or not the city's resident population increases after 1985.

7. Finance, Insurance, and Real Estate (FIRE)

This industry group is expected to continue its high rate of growth exhibited in the last decade, with projected average employment increasing by almost 19,000 by 1985 and an additional 18,400 by the year 2000. Compared to other sectors the range of possible growth is fairly narrow, with total employment in the year 2000 projected to be between 100,000 and 110,000. Growth in this group is expected to be generated primarily by increased employment in banking, which is expected to account for about 74% of the net increase to 2000. Smaller increases are projected for the other sectors, such as insurance, real estate, and holding and investment companies. (See Table II-20.)

8. Services

Employment in services is expected to increase by 31,000 jobs by 1985 with an additional 29,000 jobs expected by the year 2000 (Table II-21). Total employment is now about 105,000 and is projected to range from 129,000-144,000 by 1985. The range depends on the rate of growth of FIRE and on population changes. Leading the growth in services employment is miscellaneous business services, projected to account for one-third of the net gain in the entire group. Employment in hotels and other lodging places is expected to increase by more than 2000 jobs by 1985 and by an additional 2000 by the year 2000. About 25% of projected employment growth in services is expected to occur in medical and other health services, with a net gain of 7250 jobs by 1985 and a total gain projected of almost 14,000 jobs by the year 2000. Other professional services, including legal services, educational services, and miscellaneous services (accounting, architecture, and engineering), are also projected to increase substantially. Employment in nonprofit organizations will account for sizable increases as well.

TABLE II-19

EMPLOYMENT IN THE RETAIL TRADE INDUSTRY OF SAN FRANCISCO -
1970 AND 1973 AND PROJECTED 1985 AND 2000

SIC Code	Industry	Actual		Projected		
		1970	1973	1985		2000
				Average	Low	High
	Total Retail Trade	58,299	57,264	58,550	53,500	63,600
52	Building Materials and Farm Equipment	717	792	700	600	800
53	General Merchandise	8,614	8,136	8,000	7,500	8,500
54	Food Stores	5,738	5,838	6,000	5,500	6,500
55	Automotive Dealers and Service Stations	5,720	5,017	4,500	4,000	5,000
56	Apparel and Accessory Stores	5,622	5,947	6,250	5,500	7,000
57	Furniture and Home Furnishings Stores	2,032	1,905	1,600	1,400	1,800
58	Eating and Drinking Places	18,292	18,669	21,000	20,000	22,000
59	Miscellaneous Retail Stores	7,110	7,208	7,000	6,500	7,500
	Administrative and Auxiliary	4,454	3,752	3,500	2,500	4,500
				60,450	55,300	65,600
				650	500	800
				8,000	7,500	8,500
				6,000	5,500	6,500
				4,500	4,000	5,000
				6,250	5,500	7,000
				1,550	1,300	1,800
				23,000	22,000	24,000
				7,000	6,500	7,500
				3,500	2,500	4,500

Sources: County Business Patterns, 1970 and 1973; Arthur D. Little, Inc., projections.

TABLE II-20

EMPLOYMENT IN THE FINANCE, INSURANCE, AND REAL ESTATE INDUSTRY OF SAN FRANCISCO -
1970 AND 1973 AND PROJECTED 1985 AND 2000

SIC Code	Industry	Actual		Projected			
		1970	1973	1985		2000	
				Average	Low	Average	High
	Total Finance, Insurance, and Real Estate	65,574	67,690	86,600	82,200	91,000	105,000
60	Banking	22,549	26,512	39,500	38,000	41,000	54,000
61	Credit Agencies Other than Banks	2,126	2,807	3,450	3,200	3,700	3,750
62	Security and Commodity Brokers and Services	6,279	5,152	6,600	6,200	7,000	7,500
63	Insurance Carriers	19,391	17,791	18,000	17,000	19,000	18,000
64	Insurance Agents, Brokers, and Service	5,009	4,907	5,250	5,000	5,500	5,250
65	Real Estate	7,449	9,175	10,500	10,000	11,000	13,000
66	Combined Real Estate, Insurance, etc.	227	192	250	200	300	250
67	Holding and Other Invest- ment Companies	2,228	1,704	2,250	2,000	2,500	2,250
	Administrative and Auxiliary	316	460	800	600	1,000	1,000

Sources: County Business Patterns, 1970 and 1973; Arthur D. Little, Inc., projections.

TABLE II-21

EMPLOYMENT IN THE SERVICES INDUSTRY OF SAN FRANCISCO -
1970 AND 1973 AND PROJECTED 1985 AND 2000

SIC Code	Industry	Actual			Projected					
		1970	1973		1985			2000		
					Average	Low	High	Average	Low	High
	Total Services	97,128	105,055		136,500	129,400	143,600	165,350	157,500	173,200
70	Hotels and Other Lodging Places	9,918	11,500		13,750	13,000	14,500	15,500	14,500	16,500
72	Personal Services	6,135	5,229		6,000	5,500	6,500	6,000	5,500	6,500
73	Miscellaneous Business Services	23,615	24,491		34,000	33,000	35,000	43,500	42,000	45,000
75	Auto Repair Services and Garages	3,593	3,691		4,500	4,000	5,000	5,000	4,500	5,500
76	Miscellaneous Repair Services	891	1,051		1,200	1,000	1,400	1,200	1,000	1,400
78	Motion Pictures	2,202	2,632		3,250	3,000	3,500	3,750	3,500	4,000
79	Amusement and Recreation Services, NEC	3,064	3,532		4,250	4,000	4,500	4,750	4,500	5,000
80	Medical and Other Health Services	16,790	18,243		25,500	24,500	26,500	33,000	32,000	34,000
81	Legal Services	4,090	5,032		7,500	7,000	8,000	10,000	9,500	10,500
82	Educational Services	4,295	5,839		9,000	8,500	9,500	12,000	11,500	12,500
84	Museums, Zoological and Botanical Gardens	220	252		250	200	300	250	200	300
86	Nonprofit Membership Organizations	12,501	13,812		16,500	15,500	17,500	19,000	18,000	20,000
89	Miscellaneous Services	9,189	9,129		10,000	9,500	10,500	10,500	10,000	11,000
	Administrative and Auxiliary	625	622		800	700	900	900	800	1,000

Sources: County Business Patterns, 1970 and 1973; Arthur D. Little, Inc., projections.

Employment in personal services and repair services is expected to be more stable. Tourist oriented services such as amusement and recreation, as well as auto repair services, are expected to continue to increase in response to total employment growth in the city.

9. Government

The employment projections for this sector are based on adjusted long-range trends in government employment. The adjustments were made because of employment declines in recent years. Employment in the sector is expected to grow at a higher than average rate, increasing total government employment to 95,000-110,000 in 1985 and to 105,000-125,000 in the year 2000.

E. EMPLOYMENT EFFECTS OF PROJECTED CHANGES IN ECONOMIC ACTIVITIES

The changing structure of the San Francisco economy will affect the demand for labor in the city which might in turn, at least theoretically, generate significant employment impacts on city residents. The existence, nature, and magnitude of such impacts depend on several major considerations, as described below.

1. The Occupational Mix of the Employment Projections

The terms "labor market" and "demand for labor" usually refer to the total amount of labor demanded or available in an economy. An increase in the demand for labor thus means an overall increase in the number of jobs available. But just as an overall increase in the demand for consumer goods does not usually mean an increase in the demand for each individual consumer good, an increase in the demand for labor does not necessarily imply an increase in the demand for each occupational group. The overall labor market is composed of many different individual labor markets, many of which are considered to represent "non-competing" labor groups.

Changes in the aggregate demand for labor are virtually never equally distributed among the various individual labor markets. It is, therefore, necessary to disaggregate such changes to their occupational components in order to evaluate their effects on various occupational groups.

The demand for labor with specific training may change for a variety of reasons. The more important of these include (a) changes in the levels of employment among industries requiring differing combinations of occupations, (b) changes in the occupational mix in each industry due to the development of new production techniques, such as automation, (c) changes in the composition of the industries in terms of the mix among sub-industries and the type of product produced, and (d) the need to replace workers leaving the labor force.

Table II-22 presents estimated and projected wage and salary employment in San Francisco by eight major occupations. The occupational breakdown is based on the application of ADL's estimates of the occupational mix

TABLE II-22

WAGE AND SALARY EMPLOYMENT IN SAN FRANCISCO BY MAJOR OCCUPATION GROUPS -
1970 AND 1973 AND PROJECTED 1985 AND 2000
(in thousands)

<u>Occupation</u>	<u>Actual</u>			<u>Projected</u>					
	<u>1970</u>	<u>1973</u>		<u>1985</u>			<u>2000</u>		
				<u>Average</u>	<u>Low</u>	<u>High</u>	<u>Average</u>	<u>Low</u>	<u>High</u>
Total	489.4	483.2*		546.0*	505.2*	586.9	604.8	556.7*	653.0*
Professional, Technical, and Kindred Workers	85.1	85.8		103.0	96.0	110.0	117.6	109.2	126.1
Managers and Administrators, Including Farm	52.3	51.4		56.2	52.2	60.2	61.8	57.2	66.4
Sales Workers	44.5	43.5		42.8	39.3	46.2	44.4	40.9	47.9
Clerical and Kindred Workers	133.0	131.2		157.2	146.3	168.0	180.7	167.6	193.8
Craftsmen and Kindred Workers	52.6	50.2		50.0	45.1	55.0	49.8	43.7	55.9
Operatives, Including Transport	46.3	45.1		44.0	39.5	48.5	43.4	38.2	48.5
Laborers, Including Farm	16.9	16.4		14.7	13.5	16.0	13.5	12.2	14.8
Service Workers, Including Private Household	58.7	59.6		78.1	73.3	83.0	93.6	87.7	99.6

*Discrepancy between this total and Table II-15 total is due to rounding.

Source: Arthur D. Little, Inc., estimates.

of various industries to the employment data presented in Tables II-15 through II-21. The methodology followed in estimating the occupational coefficients for 1970 and their projections to 1985 and 2000 is explained in Appendix B.

The projected employment changes in the city combined with the projected changes in the occupational coefficients of the various industries will affect the demand for various occupational groups.

a. Professional Workers

The changing economic structure of San Francisco will increase the demand for professional workers under each of our employment scenarios. According to the low projections, the city economy will need 10,200 more professional workers in 1985 than in 1973 and 13,200 additional professional workers by 2000. According to the high employment projections the corresponding values are 24,200 and 16,100. The average expected growth shows the number of jobs available increasing by 17,200 between 1973 and 1985 and by an additional 14,600 between 1985 and 2000.

b. Managers

The number of jobs available for workers included in this category is expected to increase between 1973 and 1985, with additional increases to 2000. The increase is expected to range between 800 and 8800 by 1985 and between 5800 and 15,000 by 2000.

c. Sales Workers

The demand for sales workers depends on the employment scenario. According to the low projections, the number of jobs available for this group will decline by 4200 between 1973 and 1985 and then increase by 1600 between 1985 and 2000. The high projections show an increase of 2700 between 1973 and 1985 and an additional increase of 1700 between 1985 and 2000. The average projections show a negligible increase between 1973 and 1985 and a 1600 increase between 1985 and 2000. ^{700 decrease}

d. Clerical Workers

The demand for clerical workers is expected to increase under both the low and the high projections. The increase during the 1973-1985 period will range between 15,100 and 36,800, with an average of 26,000 jobs. The aggregate increase from 1973-2000 is expected to range between 36,400 and 62,600 with an average of 49,500 jobs.

e. Craftsmen

Our average projections show only a slight decrease (200) in the number of jobs available in this category between 1973 and 1985 and an additional slight decrease (200) between 1985 and 2000. The low projections

show a significant decline from 1973 to 1985 resulting primarily from the low construction and manufacturing projections. The decline is expected to reduce the number of jobs available by 5100 by 1985 with a further decline between 1985 and 2000.

The additional declines (1985 to 2000) are expected to be of a lesser magnitude than the 1973-1985 decline. This is due to the low projections scenario which expects most of the decline in the manufacturing sector to occur by 1985. The overall 1973-2000 decline, according to the low projection, is estimated to reduce the number of jobs in the category by 6500.

f. Operatives

The number of operatives is expected to decline under the low and average projections and increase under the high projections. The low projections show a decline of 6900 jobs between 1973 and 2000 with 81.2% of the decline occurring by 1985. The average projections show the 1973 to 2000 decline to equal 1700 jobs with 1100 of these types of jobs eliminated by 1985. The high projections show an increase of 3400 jobs between 1973 and 1985 with no change between 1985 and 2000.

The reason for an initial (1973-1985) increase followed by no subsequent change (1985-2000) is that while employment gains during the first period are expected to more than offset unfavorable long-term trends in occupational mix for that group employment gains between 1985 and 2000 will only be large enough to balance these trends.

g. Laborers

The number of jobs available for laborers is expected to decline under both the low and high employment projections. The decline from 1973 to 2000 will range between 1600 and 4200 for the high and low projections, respectively. The corresponding range for the 1973 to 1985 period is 400 to 1700.
2900

h. Service Workers

The demand for service workers is expected to grow significantly under the low, average, and high projections. The increase in the number of jobs from 1973 and 2000 is expected to range between 28,100 and 40,000 jobs. The corresponding range for the 1973-1985 increase is 13,700-23,400.

i. Summary

The effects of the changing structure of the San Francisco economy on the availability of jobs in various major categories depends on the employment scenario realized. Generally, the demand for professionals will increase. This does not mean that the demand for every profession in this category will increase. However, due to the lack of readily available specific data, and the scope of the study, we are unable to break the eight categories into their specific components.

The increase in demand for professionals follows the 1960-1970 trends as shown in Table II-23. The demand for managers will also show an overall increase though at a significantly lower rate. This is again consistent with the 1960-1970 trend. The demand for sales workers is expected to show a small average increase by the year 2000 with the possibility of either a decline or a greater increase. The demand for clerical workers will increase significantly although probably at a lower rate than during the 1960-70 period. Although the demand for craftsmen and operatives might increase (under the high projections), it is more likely that the number of jobs available for these occupation groups will decline in the future. That would mean a trend contrary to that in the 1960-70 period for craftsmen (when the number of jobs increased from 50,700 to 52,600) but consistent with the trend between 1970 and 1973 (when the number of jobs available declined from 52,600 to 50,200). Although the actual demand will also depend on the number of workers leaving the labor force, we are excluding that factor due to the lack of data and the scope of the study, as noted above. The demand for laborers will decline in the future as it did in the past. This is a result of long-term trends in the economy. The demand for service workers, which increased significantly during the 1960-1970 period, will continue to grow at a higher rate than any other occupational category.

As explained above, the projected changes in the number of jobs available for the different occupational categories is the result of several factors. Projected changes in employment are only one of these factors. Table II-24 illustrates the effects of the occupational mix changes by holding total employment constant. It shows that even if all industries were to retain their 1970 employment levels, the occupational mix would have changed due to these factors. The major effect would have been to reduce the number of managers, sales workers, craftsmen, operatives, and laborers while increasing the number of clerical and service workers. These changing mix effects are included in the projections presented in Table II-22.

The probable decline in the demand for craftsmen and for operatives, and the virtually certain decline in the demand for laborers do not necessarily imply a significant negative employment impact on city residents. The impact on city residents depends on several factors, the demand for specific occupations being only one of them. The other major factors determining the employment impact on city residents are residents' share of the jobs to be eliminated and the mobility of the labor force. These factors are discussed below.*

2. Commutation Patterns of San Francisco Employees

Table II-5 illustrated the high employment-to-population ratio in San Francisco. The city provides employment opportunities for many nonresidents. Although the specific number of jobs in San Francisco which are provided to

*The present section deals with the overall employment effects of the projected changes in the employment levels of the various activities. A more detailed quantitative analysis of the employment impacts is presented in Chapter V-C.

TABLE II-23

ESTIMATED WAGE AND SALARY EMPLOYMENT BY OCCUPATION
IN SAN FRANCISCO - 1960 AND 1970
(in thousands)

<u>Occupation</u>	<u>1960</u>	<u>1970^a</u>	<u>1970^b</u>
Total	408.9	489.4 ^c	489.3 498.3 ^c
Professional, Technical, and Kindred Workers	61.0	85.1	84.0
Managers and Administrators, Including Farm	46.4	52.3	55.2
Sales Workers	44.5	44.5	48.7
Clerical and Kindred Workers	100.4	133.0	126.9
Craftsmen and Kindred Workers	50.7	52.6	55.2
Operatives, Including Transport	46.6	46.3	46.8
Laborers, Including Farm	18.0	16.9	19.7
Service Workers, Including Private Household	41.3	58.7	52.8

- a. 1970 occupational mix (i.e., estimated actual employment by occupation in 1970).
b. 1960 occupational mix (i.e., employment by occupation that would have existed in 1970 if each activity were to retain its 1960 occupational mix).
c. Difference due to rounding.

Source: Arthur D. Little, Inc., estimates.

TABLE II-24

ESTIMATED AND PROJECTED WAGE AND SALARY EMPLOYMENT BY OCCUPATION
 IN SAN FRANCISCO BASED UPON CHANGING OCCUPATION MIX
 OF EMPLOYMENT WHILE HOLDING TOTAL EMPLOYMENT CONSTANT
 (in thousands)

<u>Occupation</u>	<u>1970 Mix</u>	<u>1985 Mix</u>	<u>2000 Mix</u>
Total	489.4*	489.2*	489.2*
Professional, Technical, and Kindred Workers	85.1	85.7	86.0
Managers and Administrators, Including Farm	52.3	50.2	49.1
Sales Workers	44.5	40.6	38.7
Clerical and Kindred Workers	133.0	137.9	141.5
Craftsmen and Kindred Workers	52.6	50.3	48.6
Operatives, Including Transport	46.3	46.1	45.5
Laborers, Including Farm	16.9	13.9	12.0
Service Workers, Including Private Household	58.7	64.5	67.8

*Difference due to rounding.

Source: Arthur D. Little, Inc., estimates.

nonresidents is not available,* it is possible to derive estimates of this number. In 1970, for example, total employment equaled 535,200. Assuming the percentage of multiple-job holders to be about 5.1% (equaling the national average) this would mean about 507,900 persons employed in San Francisco. The 1970 Census shows the number of employed San Francisco residents to equal 318,311. Even if it is assumed that all city residents would have been employed in San Francisco, that would mean about 189,600 nonresidents are employed in the city. In reality many city residents are employed out of the city. Our best estimate is that there were ³41,000-³45,000 out-commuters in the city in 1970. That would mean that between ~~221,000~~ and ~~225,000~~ nonresidents were employed in the city in 1970.** Due to the large percentage of in-commuters it is apparent that a change in the number of jobs available in San Francisco does not affect city residents alone. The effect on city residents resulting from a decline in the number of jobs available in a certain category depends to a large degree on the percentage of nonresidents in that category. Although far from being perfect, the 1970 Census data in the Journey to Work volume are the best and actually the only source of data dealing with commutation patterns by economic sector and major occupational category. Table II-25 presents the results of that Census (ADL allocated the not-reporting categories in the Census). The discrepancy between the total employment in the table (448,950) and the number of employed persons appearing in this report (Table II-15) is due only partially to multiple-job holders. The rest of the discrepancy is unexplainable.

Tables II-26 and II-27 present the percentage breakdown of San Francisco employees by occupation, industry, and earnings, and by place of residence. As shown in Table II-26, only 61.1% of the total jobs in the city are filled by city residents.*** The percentage of city residents among employees varies by industry, occupational group, and income level. The higher-paying occupations (such as craftsmen) show a significantly higher percentage of nonresidents than the lower-paying occupations such as clerical. Due to the different occupational mix in various industries, the percentage of nonresidents varies from industry to industry. In construction which has the highest average wage of all sectors (\$13,876 in 1973), the percentage of city residents is the lowest (42.6% of total sectorial employment).**** In the personal

*The U.S. Department of Commerce's Journey to Work portion of the 1970 Census provides data for commutation patterns. Although the data are the best available, they leave much to be desired. The total number of employees, including the non-reporting category, does not correspond to other sources, including the 1970 Census. In addition, the industrial breakdown seems to contradict other available sources.

**This estimate is much higher than that of some other sources which contain internal inconsistencies.

***Our estimates show a significantly lower percentage ranging between 53-55% of total employment; the 61.1% is therefore overestimated.

****The 42.6% of city residents in the construction sector is lower than the percentage of city residents in any of the occupational groups listed. This is due to the high share of construction employment in specific occupations that have a much lower percentage of city residents than indicated by the rather broad occupational categories of the Journey to Work Census.

TABLE II-25

EMPLOYMENT IN SAN FRANCISCO BY PLACE OF RESIDENCE - 1970

Major Occupation and Industry Group	Total Employment	Living Inside SMSA		Living Outside SMSA
		San Francisco	Remainder	
Employed, at Work	448,950	274,186	152,547	22,217
Professional, Technical, and Kindred Workers	82,235	44,949	32,161	5,125
Managers and Administrators, Except Farm	47,264	22,005	23,518	3,741
Sales Workers	36,214	19,979	13,598	2,637
Clerical and Kindred Workers	125,993	85,629	37,140	3,224
Craftsmen and Kindred Workers	45,641	21,526	20,597	3,518
Operatives, Except Transport	26,776	19,163	6,407	1,206
Transport Equipment Operatives	14,756	7,938	5,768	1,050
Laborers, Except Farm	13,571	8,909	4,123	539
Farm Workers	505	312	107	86
Service Workers, Including Private Household	53,995	43,776	9,128	1,091
Industry				
Construction	23,578	10,037	11,600	1,941
Manufacturing	55,501	28,386	23,145	3,970
Transportation, Communications, and Utilities	58,495	28,179	25,222	5,094
Wholesale and Retail Trade	87,166	56,333	27,254	3,579
Finance, Insurance, and Real Estate	58,812	35,813	20,643	2,356
Business and Repair Services	22,672	13,753	7,956	963
Personal Services	21,808	18,628	2,850	310
Professional and Related Services	78,099	55,975	19,980	2,144
Public Administration	34,758	21,847	11,554	1,357
All Other Industries	8,061	5,235	2,323	503

Source: U.S. Department of Commerce, Bureau of the Census, Journey to Work, 1970, with Arthur D. Little, Inc., adjustments.

TABLE II-26

PERCENTAGE DISTRIBUTION OF WORKERS EMPLOYED IN SAN FRANCISCO
BY OCCUPATION, INDUSTRY, AND EARNINGS CATEGORIES

	<i>Living</i> Outside SMSA*	<i>Living</i> Inside SMSA San Francisco*Remainder*
Employed, at Work	4.9%	61.1% 34.0%
Professional, Technical, and Kindred Workers	6.2	54.7 39.1
Managers and Administrators, Except Farm	7.6	44.7 47.7
Sales Workers	7.3	55.2 37.5
Clerical and Kindred Workers	2.5	68.0 29.5
Craftsmen and Kindred Workers	7.7	47.2 45.1
Operatives, Except Transport	4.5	71.6 23.9
Transport Equipment Operatives	7.1	53.8 39.1
Laborers, Except Farm	4.0	65.6 30.4
Farm Workers	17.0	61.8 21.2
Service Workers, Including Private Household	2.0	81.1 16.9
Industry		
Construction	8.2%	42.6% 49.2%
Manufacturing	7.2	51.1 41.7
Transportation, Communications, and Utilities	8.7	48.2 43.1
Wholesale and Retail Trade	4.1	64.6 31.3
Finance, Insurance, and Real Estate	4.0	60.9 35.1
Business and Repair Services	4.2	60.7 35.1
Personal Services	1.4	85.4 13.2
Professional Services	2.7	71.7 25.6
Public Administration	3.9	62.9 33.2
Other	6.2	65.0 28.8
Total, with Earnings	5.4%	60.4% 34.2%
\$ 1- 999 or Loss	2.5	75.4 22.1
\$ 1,000- 2,999	3.6	74.3 22.1
\$ 3,000- 4,999	3.6	74.6 21.8
\$ 5,000- 6,999	3.3	70.8 25.9
\$ 7,000- 9,999	4.8	61.3 33.9
\$10,000-14,999	8.7	42.4 48.9
\$15,000-24,999	9.5	32.9 57.6
\$25,000+	8.3	38.6 53.1

*Total of each row equals 100.0%.

Source: U.S. Department of Commerce, Bureau of the Census, Journey to Work, 1970, with Arthur D. Little, Inc., adjustments.

TABLE II-27

PERCENTAGE DISTRIBUTION OF WORKERS EMPLOYED IN SAN FRANCISCO
BY PLACE OF RESIDENCE

	<i>Living</i> Outside SMSA	<i>Living</i> Inside SMSA	
		San Francisco	Remainder
Employed, at Work	100.0%	100.0%	100.0%
Professional, Technical, and Kindred Workers	23.1	16.4	21.1
Managers and Administrators, Except Farm	16.9	8.0	15.4
Sales Workers	11.9	7.3	8.9
Clerical and Kindred Workers	14.5	31.2	24.3
Craftsmen and Kindred Workers	15.8	7.9	13.5
Operatives, Except Transport	5.4	7.0	4.2
Transport Equipment Operatives	4.7	2.9	3.8
Laborers, Except Farm	2.4	3.2	2.7
Farm Workers	0.4	0.1	0.1
Service Workers, Including Private Household	4.9	16.0	6.0
Industry	100.0%	100.0%	100.0%
Construction	8.7	3.7	7.6
Manufacturing	17.9	10.4	15.2
Transportation, Communications, and Utilities	22.9	10.3	16.5
Wholesale and Retail Trade	16.1	20.5	17.9
Finance, Insurance, and Real Estate	10.6	13.0	13.5
Business and Repair Services	4.3	5.0	5.2
Personal Services	1.4	6.8	1.9
Professional Services	9.7	20.4	13.1
Public Administration	6.1	8.0	7.6
Other	2.3	1.9	1.5
Total, with Earnings	100.0%	100.0%	100.0%
\$ 1- 999 or Loss	2.4	6.3	3.2
\$ 1,000- 2,999	7.8	14.1	7.4
\$ 3,000- 4,999	9.0	16.4	8.5
\$ 5,000- 6,999	11.4	21.6	14.0
\$ 7,000- 9,999	19.2	21.8	21.2
\$10,000-14,999	30.9	13.3	27.1
\$15,000-24,999	14.6	4.5	13.8
\$25,000+	4.7	2.0	4.8

Source: U.S. Department of Commerce, Bureau of the Census, Journey to Work, 1970, with Arthur D. Little, Inc., adjustments.

services industry, which has one of the lowest average wage levels (\$5,560 in 1973), the percentage of city residents is the highest (85.4% of total sectorial employment).

The earning categories breakdown by place of residence reflects the effects of the commutation pattern which resulted from population shifts. About three-fourths of the very low-paying jobs (up to \$5,000) were taken by city residents, while less than 40% of the higher-than-average-paying jobs (\$10,000 and over) were held by city residents. The data presented in Table II-26 show that a loss of 1000 jobs in the city in 1970 would have reduced the number of employed residents by differing values depending on the industry in which the loss occurred. A decline in FIRE, for example, would induce about a 50% greater employment impact on city residents than an equivalent decline in construction.*

Although the expected decline in the demand for craftsmen in the city, and the probable decline of the demand for operatives, will affect some city residents, the effect will be much smaller than indicated by the total decline in demand for these occupations. Using the 1970 estimates, about 50% of the jobs lost will be held by San Francisco residents. This estimate, however, seems to represent an upper limit rather than the most likely estimate, considering the continued population shifts in the Bay Area.

3. The Mobility and Supply of Labor

The employment impacts of the projected changes depend to a large degree on the mobility of labor among occupations and industries and on expected changes in the supply of labor. A decline in the demand for a specific occupation will have a greater impact on city residents if the city's supply of that labor is increasing rather than declining. For example, a loss of 1000 jobs in the craftsmen category will have a more significant impact on residents' employment if the number of craftsmen in the city is increasing at the same time. If, on the other hand, the number of craftsmen in the city were to decline at the same time by 2000, the net impact might be negligible or even positive depending on the supply of nonresident craftsmen. For if the aggregate supply declines by more than the decline in demand, the net effect is to increase rather than decrease job opportunities for those remaining in the labor market.

The employment impacts of a decline in the demand for labor by any given industry depend also on the mobility of its employees. The greater the ability of the employees to find alternative employment, the smaller is the negative employment impact of the projected decline. The mobility of labor depends on many factors, including skills, age, income, information and employment opportunities in other industries, location, and similar occupations. The greatest mobility usually exists in areas containing firms of similar industries and occupations, and close to one another. The general decline in manufacturing will prevent large-scale

*This estimate ignores the income-employment multiplier which depends on the relative income of various occupational groups, their spending patterns, etc. It is assumed that the effect of that multiplier is offset by the continued out-migration of higher-paid employees. For further discussion, see Chapter V-C.

mobility of that sort. Labor adjustments will therefore depend primarily on the mobility of labor within the same occupational groups and on retraining, which will increase mobility among occupations.

4. Summary and Conclusions

The employment impacts of the projected changes on San Francisco residents depend on a variety of factors. The growing sectors in the city will increase the demand for several occupational categories while probably reducing the demand in other categories. Most of the increase will be in the professional, clerical, and service categories. The demand for sales workers might increase or decline depending to a large extent on the future of the retail trade sector, which will employ between 10,900 and 13,600 salespeople in the year 2000. The demand for craftsmen and operatives is likely to decline primarily because of an expected decrease in manufacturing, wholesaling, and certain TCU activities. The demand for laborers is virtually certain to decline due to long-term trends in the occupational mix. The change in the demand for the various occupations is due not only to the projected changes in employment but also to projected changes in the occupational mix of industries. A significant share of the projected decline in certain occupational groups is due to the change in the occupational mix of activities rather than the changing economic structure of the San Francisco economy.

The net impacts of these changes on city residents depend on future commutation patterns, the labor supply, and the mobility of the occupational groups. While a sudden decline in one industry might have a significant impact on city residents, a gradual decline seems to have only a limited adverse impact. This point is well illustrated by a comparison between Table II-28, which presents the occupational breakdown of city residents in 1960 and 1970, and Table II-23, which includes the occupational changes taking place during that period.

Comparing the two tables, we find no correlation between the changes in the occupational mix and changes in employment and unemployment levels of city residents.

As shown in Table II-23, the demand for professional workers and managers increased significantly between 1960 and 1970. Table II-28 shows that the increased demand for these occupations was accompanied by a significant increase in unemployment of city residents in these occupations. The demand for operatives, on the other hand, declined between 1960 and 1970 (see Table II-23) as did the unemployment rate for city residents in this occupational category.

It is clear that the changes in the demand for specific occupations had no apparent impact on the employment of city residents. The major reason for the lack of cause and effect between the industrial mix and unemployment rates is due to the major changes which took place in the population mix of the city. Although additional study is necessary in order to project future population shifts, the trends shown in Table II-28

TABLE II-28

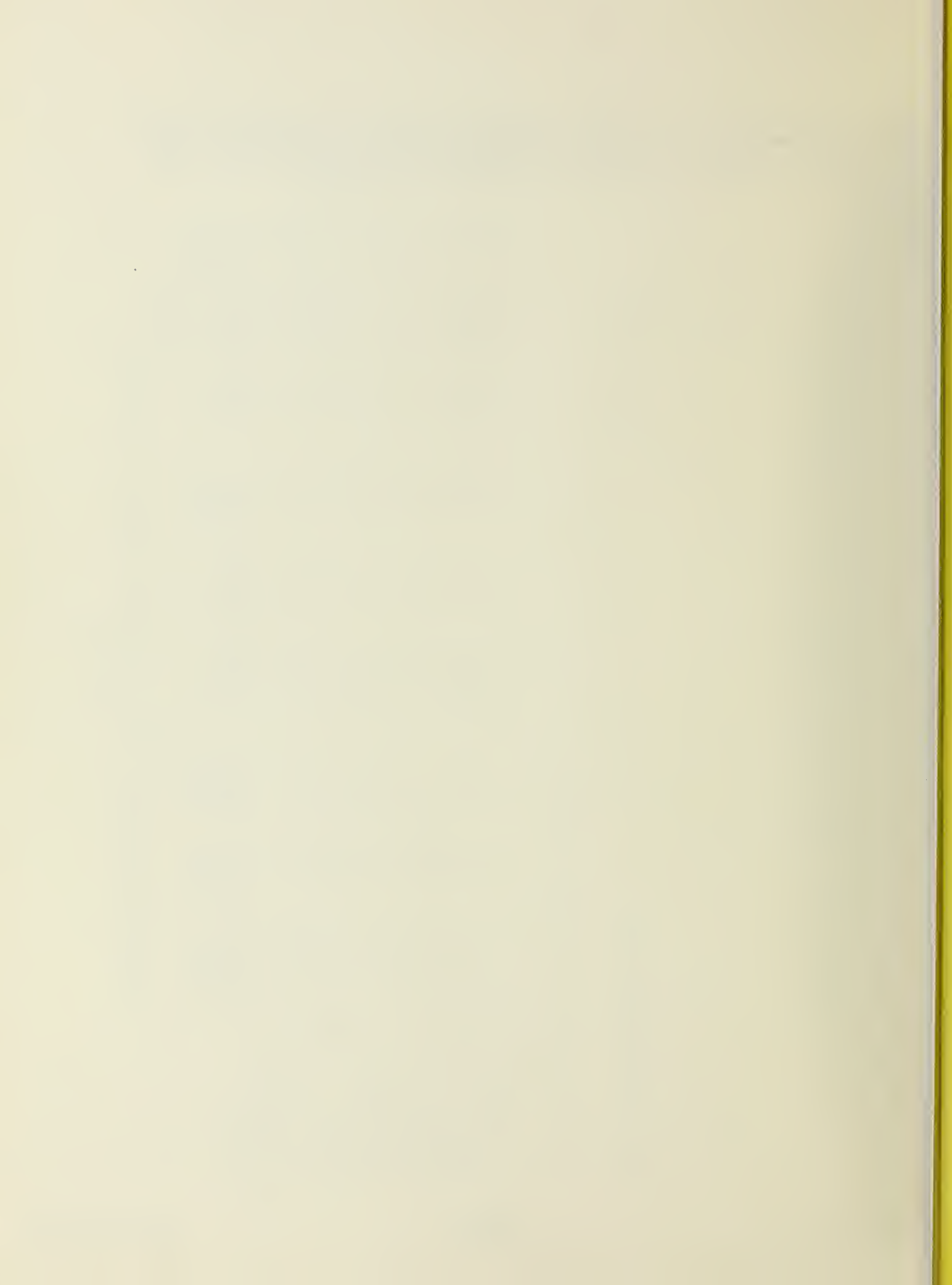
EMPLOYMENT AND UNEMPLOYMENT OF SAN FRANCISCO RESIDENTS BY OCCUPATION - 1960 AND 1970

Occupation	Unemployment				Employment		
	Percent 1960 Unemployed	Percent 1970 Unemployed	Percent Change 1960-70	1960 Unemployed	1970 Unemployed*	1960 Employed	Percent Change 1960-70
Professional and Managerial	2.72%	3.59%	32.0%	2,103	2,916	75,106	8.3%
Sales	5.12	5.38	5.1	1,475	1,292	27,332	(16.9)
Clerical	3.90	4.45	14.1	3,487	4,297	85,909	7.3
Craftspersons	7.38	8.51	15.3	2,834	2,501	35,589	(24.4)
Operatives	9.03	8.54	(5.4)	4,105	3,043	41,358	(21.2)
Laborers	11.63	11.90	2.3	2,074	1,639	15,758	(23.0)
Service	8.73	6.91	(20.8)	4,795	3,749	50,105	0.8
Total	-	-	-	20,873	19,437	331,157	(3.9)

*Does not include persons last employed 10 years ago.

Source: U.S. Department of Commerce, Bureau of the Census, 1960 and 1970 Census of Population, General Social and Economic Characteristics.

combined with the information contained in Table II-23 indicate that the employment of city residents depends primarily on growth in the demand for professional, managerial, clerical, and service occupations rather than the retention of jobs for craftsmen or operatives.



III. A FRAMEWORK FOR LOCATIONAL PREFERENCE ANALYSIS

In order to better understand the spatial distribution of economic activities in San Francisco and the ability of the city to effect changes in land use or to alter trends in industrial location and development, it is necessary to consider the determinants of the location of economic activities.

A. GENERAL FACTORS DETERMINING INDUSTRIAL LOCATIONS

1. Short-run Vs. Long-run Decisions

The locational decisions of any firm involve short-run and long-run locational decisions. The short run is usually defined as a period during which some factors are fixed, while the long run is that period into the future where all factors are changeable. Though in reality there is usually no clear distinction between the two, the concepts are essential for the understanding of the locational behavior of firms. The fixed factors, and thus the short run, differ from activity to activity and from firm to firm. For a manufacturing plant, for example, these factors might be heavy existing machinery which cannot be sold without a loss and which either cannot be relocated or is costly to relocate or replace. For a retail store or an attorney's office, on the other hand, the short run might depend on the terms of the lease. For new plants which are still in their planning stages, there is no short run if no commitments to any specific location have been made.

It is apparent that in the long run the location of firms is more likely to be affected by changing circumstances than in the short run since the former allows them greater locational flexibility than the latter. In many cases firms (especially small family establishments) are very slow to react to changing circumstances either due to lack of information or a reluctance to "start all over again." In such cases the firms are likely to stay at the same location until they are forced to shut down. The distribution of spatial activities in any area is therefore more likely to show greater stability in the short run than in the long run.

This distinction is particularly important in terms of potential industrial possibilities in San Francisco, for as has been shown in the past, a decision by a large manufacturing firm to relocate greatly increases the possibility that the firm will relocate out of the city. The problems posed by this possibility are quite different from the questions which arise in connection with attempts to attract new firms into the city. Since San Francisco is an older industrial center, there is a number of industrial firms and establishments in the city which became established here many years ago and which remain, unless compelling reasons require a move, for reasons of tradition, sunk costs, established suppliers and markets, and a stable labor force. In the recent past, however, San Francisco has not been attracting new industrial establishments

into the city to any significant degree. Losses in employment in manufacturing and related activities have resulted from the out-migration or closing of established firms and the lack of new entrants.

Land use in the city will change in response to two types of effects -- first, the passage of time during which the short run is gradually transferred into a long-run decision allowing firms and individuals to react to changes which have already occurred, and second, a change in the factors determining the location of economic activities which will affect future locational decisions. Though the two are usually intermingled due to the dynamics of economic, technical, and sociological conditions, it is important to distinguish between adjustments made due to greater time flexibility and those made in response to continuous changes.

While short-run considerations are important for the understanding of the locational process, it is the long-run determinants which affect the overall process of land use pattern adjustments. The analysis of the factors affecting locational decisions must start with the objectives of the firm or the decision-making unit. A nonprofit institution -- e.g., a public hospital -- might be affected by a different set of locational determinants than a similar private activity. A family company which is emotionally attached to a specific area or feels responsible for the welfare of its employees might behave differently than a company whose sole objective is to maximize profits. Even when such exceptions are excluded, profits are usually not the sole objective of many or even most firms. Good will, prestige, and other nonmonetary considerations usually are involved in the firm's decision making. Still, while dealing with the locational decisions of private firms, it is useful to assume that the prime objective of such firms is to maximize their profits and, after analysis of the results of such behavior, to make necessary allowances for all other considerations.

2. The Effect of Location on Costs and Profits

The profits of any firm are determined by the difference between its revenues and the costs required to obtain these revenues. The optimal location for the firm is that which will maximize net revenue.

Though each activity depends to a different degree on each specific factor, all economic activities involve three basic stages:

- Procurement - the purchasing and delivery of all necessary inputs to the site of processing.
- Processing - the transformation of the inputs into the activity's output.
- Distribution - the selling and delivery of the product or service produced.

The cost of procurement is determined by the cost of transporting the supplies from their resource markets to the site of processing. The cost of processing is determined by the cost of labor, structures, utilities,

taxes, etc. The value of various locational amenities can be subtracted from these costs so that total processing costs for each location can be compared with those of all other locations. The costs of distribution depend on the nature of the product and its relevant market area: for a manufacturing firm which serves a metropolitan area, for example, they are determined primarily by the cost of distribution to customers. For a downtown department store, they are determined primarily by the cost of drawing customers to the store.

The cost of procurement can be minimized by locating the activity at the "center of gravity" of the various resource markets. The cost of processing can be similarly minimized by locating the activity at a site where the aggregate costs of land, labor, taxes, etc., are the lowest, and the distribution costs can be minimized by locating at the customers' center of gravity. It is apparent that no single location can satisfy all these minimum cost requirements: i.e., a location which minimizes the cost of one stage is most unlikely to be the one that minimizes the cost of the other two stages. The optimal location is therefore that which minimizes aggregate costs relative to revenues rather than individual stage costs.

Generally, the relative magnitude of the locational pulls of each of the three stages will determine the location of the activity in the long run. Activities such as steel production, for example, where procurement costs outweigh the costs of processing and distribution, will be resource-oriented and locate close to the resource markets. The specific site at such a location will be determined by the cost of land, access to transportation, labor and utilities, tax structure, and amenities. Resource-oriented activities include activities which are strongly dependent on raw material and those realizing significant bulk or weight loss during the processing stage (e.g., frozen foods processing and paper mills). Processing-oriented industries include activities for which the processing stage cost differential of various locations outweighs those of the other two stages. In most cases the major factors determining processing costs are the availability and cost of labor. Industries for which labor cost differentials are of critical importance are said to be labor-oriented. Here again, the specific site within the general location is one which can satisfy the general labor orientation and at the same time minimize the cost of procurement, rents, distribution, etc. The apparel industry is an example of such an orientation. Due to the criticality of labor costs in the industry, it is generally labor-oriented. The specific site of such an activity is, however, determined by rent, access to utilities, transportation, and the like.

It is interesting to note the changing nature of the labor orientation of various industries as they mature and develop. In their early stages industries usually are labor-oriented due to their dependence upon experienced labor. That labor is usually available in only few locations where the industry happened to develop. The concentration of skilled labor in few locations (apparel in the mid-Atlantic states, for example) and the labor orientation of the developing industry resulted in a significant industry concentration in these areas. As the industries mature and production techniques become standardized, the dependency on that labor

diminishes and a new labor orientation might develop. This new labor orientation is affected by the availability of lower wage, relatively unskilled or semiskilled labor and management (which is the major reason for the migration of the apparel industry to the southern states).

Distribution-oriented industries include all activities for which access to the customer is the most critical determinant of costs and revenues. Such activities are said to be market-oriented. The market orientation of such activities varies considerably from activity to activity and from firm to firm. In manufacturing, market-oriented industries are usually those which either realize a considerable weight or bulk gain during the production process (e.g., soft beverages) or those where speed of delivery or face-to-face contact is important (e.g., newspaper printing and some bakery products). Most commercial and service activities are by their very nature market-oriented. The food industry has generally sought locations within a metropolitan area and within central cities because of the transportation costs saved in shortening the distance to the consumer for weight-adding products such as bottled beverages and because of the requirements for quick delivery for perishable products such as bread and dairy products.

Over recent years there has been a tendency toward expansion of the market areas of major producers from the local to the regional level, resulting in a preference for a location which is accessible to areas of growing population; there have also been technological changes which have reduced the influence of weight and perishability. For example, the shift from bottled to canned beverages has reduced the weight involved in the final product. New methods for making bread last longer and for preserving foodstuffs through canning and freezing have reduced the problem of handling perishable commodities. Both of these changes have served to expand the potential market for a firm to a wider area and lessened its dependence on a central location.

Market-oriented activities tend to locate near the center of gravity of their appropriate market areas. The specific site is again determined by ease of access to transportation and communication networks, labor markets, and cost of land. The market area itself is a function of transportation costs, production technology, consumer behavior, population patterns, and the nature of the product. In manufacturing, for example, capital requirements and economies of scale determine a much larger market area for beer than for soft drinks. The market orientation of breweries would therefore lead to a different locational preference from that of soft drink bottling plants which in turn have different location preference from bakeries.

Over the past decade, a substantial part of the decline in the food, printing, and building materials industries in San Francisco can be explained in terms of consumer market shifts caused by a redistribution of population in the region and by technological changes in production.

The printing industry is an example of an industry which is very market-oriented and tends toward central locations because of the need for frequent and close contracts with its customers. Growth of demand

from financial institutions, advertising and retailing, administrative headquarters, and business services in the central urban locations increases the demand for printing services which can be supplied on short notice. However, even in this industry, where the demand for printing services involves long-term orders of massive amounts (such as a large corporation's annual report) it is possible for a large producer to locate at a great distance from the client.

The building materials industry has also tended to locate close to the demand for its products and therefore where construction levels are high. Because the products of this industry are bulky and heavy, transportation costs are high relative to the value of the product. A central location will be preferred only if construction activity is high and the value/bulk ratio of the product is relatively low. Perhaps the extreme example of a low value/bulk product is concrete. It is common to find concrete batching plants in virtually every city of any size; the same is true of fabrication of architectural and structural metal products and lumber products. However, as products become more standardized, as large producers seek out national markets for their products, and as use of new materials (such as aluminum) reduce the weight involved, a central urban location may no longer be preferred in contrast to a central national location, perhaps in the Midwest or close to the source of raw materials.

In retail trade, various activities tend to have a different market area and therefore have different locational patterns. Some shopping goods, such as diamonds, have a citywide or regionwide market area. The market orientation of such activities requires a center city location and an agglomeration of activities. Not all shopping goods with a citywide market area locate at the center. Auto dealers, for example, usually do not locate in such a way although they tend to locate close to other dealers. The reason for a non-downtown location is their large land requirements which reduce the value per square foot of these activities below that of other less land-intensive activities with which they must compete for downtown sites.

While certain activities realize positive agglomeration effects, other activities realize positive deglomeration (i.e., negative agglomeration) effects even in the same type of activity. Some eating and drinking establishments -- for example, visitor oriented restaurants -- tend to locate in the same area because of agglomeration effects. Neighborhood cafeterias, on the other hand, prefer a local monopoly (i.e., realize positive deglomeration effects).

As explained above, the relative importance of each of the factors determining the optimal location of every economic activity is a function of many variables. These variables are all susceptible to changes in the technologies of transportation, productions, distribution, and consumption. These changes in technology combined with population shifts and changing economic and social behavior have a continuous impact on the locational pattern of economic activities and land use in the city.

B. CITY VS. SUBURB: EXTERNAL VS. INTERNAL ECONOMIES OF LOCATION AND SITE

Given a preference for a particular region or metropolitan area, every industrial firm ultimately attempts to reduce its total costs relative to the value of its products through site and plant choice. Generally it is accepted that manufacturing has exhibited increasing returns to scale over time, leading to the operation of larger plants. Site preferences have changed in accordance with this pattern.

There are two ways in which economies in production can be realized through site choice. First, an industrial establishment may reduce costs, increase output, or both through improved plant design, use and layout, materials handling, and equipment. "Internal economies of location" are those that accrue from an improved industrial plant. Over time, the search for improved plants and "internal economies of location" have led to the construction of single-story plants on large tracts of land in suburban areas. Such plants generally have afforded faster work flow and adequate space to maintain inventories necessary for modern continuous-flow production processes. These improvements, along with the use of additional machinery and equipment in production, have increased labor productivity.

Second are external economies of location. A firm's profitability may be dependent primarily on accessibility of workers, services, markets, and suppliers -- necessary ingredients in production which are external to the plant itself. Locations with high external economies are typically sought out by establishments which deal in nonstandardized materials and produce nonstandardized products. These firms depend on a wide variety of linkages to services and suppliers which may not be available at the same locations where internal economies of location in plant siting and design can be achieved.

Typical of the important linkages are:

- Access to specialized services which small firms cannot provide for themselves (e.g., repairs),
- Banking facilities for credit,
- Staff services, such as engineering, accounting, and legal counsel,
- Fast delivery services to reduce necessary inventory maintenance,
- Brokers and jobbers involved in large-lot buying and selling for many small firms,
- Favorable rates for shipment of small lots of supplies and products,
- A broad and interchangeable labor market,

- Public transportation for employees, and
- Rapid communication with suppliers and customers.

Large firms may be able to provide many services and store supplies "in-house"; their decision to do so in itself affects site requirements. Small firms, on the other hand, cannot afford in-house staff functions or specialized skills, the maintenance of large inventories, or the capacity to handle the fabrication of all components of a finished product. They are dependent on ready accessibility to other firms.

Linkages among firms affecting external economies of location may be of many types. A vertical linkage exists where different establishments handle separate stages in a series of operations leading to completion of the finished product. An example is the linkage between a foundry producing metal parts and a firm engaged in metal polishing. A large establishment may include both processes. Where parts are not standardized, it is more common to find a small foundry and a small metal polishing firm. A second type of linkage is horizontal, where different establishments fabricate components which are made into a final product. Thus, several small machine shops may produce various parts which are used in shipbuilding. Specialized services such as job printing, banking, and engineering services represent another type of linkage. The availability of such services may be very important to the survival of small manufacturing firms.

For firms where external economies of location outweigh the desirability of internal economies of plant layout, a central urban location is likely to be preferred, and often is a necessity. At any time, there will be many small firms dependent on such a location. However, as indicated, the tendency is toward larger establishments, and therefore toward a greater emphasis on internal economies of location. Growing establishments must move to obtain more space and larger establishments require large plants on generous amounts of land. These are generally not available in the central areas and land prices are not competitive. As manufacturing in the nation in general tends toward greater agglomeration and larger establishment size, the number of small firms is likely to decline and with this the demand for central urban locations. There is always a number of small firms seeking space, although they represent a smaller and smaller share of total employment in the industry.

Thus, establishment size, rather than type of product, may often be more determinative of choice between city and suburban locations. The general factors mentioned before most often affect the location of establishments as among regions and states; with respect to intraregional location choice, plant size may be determinative at least in those industries which are not strongly influenced by a critical factor such as product perishability or labor force availability. As the transportation network has expanded, all industrial firms have tended to become more and more footloose.

Large firms seek suburban locations chiefly because they demand large plants and sites. Once plant size becomes an important factor, land cost, tax burdens, and the availability of room for expansion become important

variables. Industrial out-migration from San Francisco to suburban locations has regularly been shown to result chiefly from the demand for greater space. Once a firm decides it must move to obtain more space, it is more likely to leave the city for a location where land is cheaper, the tax burden is lighter, room for future expansion can be assured, and greater environmental control is possible.

Movement out of San Francisco to other regions and states is often the result of similar considerations. But other variables are likely to be more important, such as wage rates, access to national markets, or greater proximity to raw materials. With respect to locational decisions involving choices among regions, there is little that a city can do to affect the choice. Where a different regional location is important to the industry or where differential wage rates among states and regions make a significant difference, the decision is not subject to influence on the basis of locally manipulable factors. (Some exceptions, such as the Port or Hunter's Point Naval Shipyard, may exist when specialized facilities are limited.)

In the case of city-suburban migration, this may not be the case. Labor force availability and wage rates tend to be fairly uniform within the Bay Area. Although an East Bay location is closer, by rail and truck, to national markets, freight rates do not vary between San Francisco and an East Bay location (although time involved in shipment does). The most significant intraregional differences have to do with land and building cost, land and space availability, access to markets, availability of services, presence of other firms, taxes, environment, the "business climate," and the ability to attract the necessary labor force to the plant's location. San Francisco's relative position with respect to these factors is constantly changing over time and is either advantageous or disadvantageous depending on the specific industry and the size and type of firm. Overall, the disadvantages have outweighed the advantages for large manufacturers in San Francisco.

C. KEY FACTORS AFFECTING THE LOCATIONAL DECISIONS AND SITE PREFERENCES OF SAN FRANCISCO'S MAJOR MANUFACTURING INDUSTRIES

1. Food and Beverages

The major employers in San Francisco's food and beverage industry serve national markets and have been located here either because they were started by residents and grew or because national firms located plants here when San Francisco was still the center of the market in the Bay Area. The former reason is generally the case for the coffee roasting firms; the latter for the brewers. Today there is less reason for a San Francisco location. The center of the market has shifted east and south with the growth of Alameda, Contra Costa, and Santa Clara counties. Raw materials such as hops and green coffee still come through the Port but can be delivered easily by truck to any site in the Bay Area. Sales are declining in the beer industry so that a larger population is required to support the production of a single plant; beer no longer sells well just because it is locally made.

Generally, however, food and beverage plants are highly specialized in character; they cannot be sold for different uses in most cases and represent large investments in structure and machinery. Breweries are good examples, as are bottling plants. Given these circumstances, firms are unlikely to relocate and build new plants until after a plant has been fully depreciated or unless major market shifts force a reduction in total plants in use.

A declining market and a shift in the available market within the Bay Area are becoming a deciding factor in the beer industry and are likely to result in the abandonment or relocation of the major breweries in the city over the near term. There is so little likelihood of an in-city relocation that site requirements are almost meaningless. The beverage industry is dependent, however, on the availability of a regular and preferably inexpensive source of water, which San Francisco has always provided and can provide almost anywhere within the city's major industrial areas. Since specialized structures are required, the industry seeks inexpensive, open land, rather than available built space, with adequate access to both rail and truck service. Beverage bottling companies also require adequate land for truck and product storage and prefer relatively uncongested locations close to wholesale and retail outlets. Virtually any location within a city as small as San Francisco is accessible to the city's own retailers and wholesalers. The Mission, Potrero, and Bayshore industrial areas offer less congestion and more inexpensive land than the more central Northern Waterfront and South of Market areas.

Meat packing was once a major industry in San Francisco. One-level structures on large sites are preferred by slaughterers because of the bulk and weight of the input and the continuous-flow method of production. The industry also requires substantial sewage facilities and may be required to perform sewage treatment itself. Where sewage treatment problems are severe, as they are in San Francisco, this can be very costly. Because of certain nuisance effects, slaughterers prefer locations far from residents who would be bothered.

2. Apparel

Large segments of the apparel industry have a natural tendency to locate in a city such as San Francisco, rather than in surrounding suburban locations. In addition, they have very specific site and location preferences within the city. Because a very high proportion of the work force consists of women who make relatively low wages, reliable and quality transit access is essential. In San Francisco, transit access is best in Downtown and South of Market; access to the Mission district is also fairly good from most parts of the city. On the other hand, transit access is not as good to the central and southern industrial areas. Only those firms with employees who can afford to drive risk a location outside the major transit service areas. Because most employees in the industry are women and commute by transit, security is also an important factor.

Formerly apparel manufacturers felt a strong need to be as close as possible to the Downtown in order to be close to potential customers. Today it is generally accepted that buyers will come to a plant and showroom

almost anywhere in the city, and again, in San Francisco, distances are short. There does appear, however, to be a tendency for manufacturers to cluster in the same areas, perhaps an instinctive reaction to the advantages of "one-stop shopping" to prospective buyers. Sewing contractors are more flexible as to location since they can pick up and deliver easily anywhere within the city.

San Francisco's apparel industry is generally fashion-oriented and because this branch of the industry is highly competitive, firms seek to avoid capital outlays on buildings and land and to minimize rent. All but the largest and most established manufacturers seek inexpensive rental space, almost always resulting in locations in old, multi-storied buildings. The industry does not appear to suffer serious disadvantages from a location in a multi-story building; often a single firm occupies only one floor in any event so that goods in production do not have to be moved from floor to floor. But single-story structures are likely to be preferred by firms which cannot accommodate their entire production needs on one floor. Due to unavailability in the preferred locations, however, single-story structures are not commonly occupied in this industry.

The industry typically pays rents of from 10-15 cents per square foot per month in San Francisco today. Since, as noted, price competition is strong and fashion dictates the strength of a firm's market in any one year, low rents are always sought to minimize risk and extra costs, despite the fact that rents are a very small portion of total costs. Due to annual fluctuations in sales, firms also need the possibility for rapid and unexpected expansion of their occupied floor space. However, the increasing use of contractors for sewing and finishing has freed the manufacturers from much of the concern regarding space for final production. The larger contractors, once well established, do seek large spaces. Because zoning in Chinatown limits the size of sewing shops, the large contractors are beginning to seek locations outside that area in order to maintain larger and more efficient shops.

Contractors can require as little area as 75-85 sq ft per employee, whereas manufacturers handling design, cutting, and storage generally require from 135-175 sq ft per employee, with the larger firms utilizing less space per employee. The largest firms may have total space demands ranging from 30,000-60,000 sq ft, with medium-size firms at 10,000-20,000 and the smallest firms starting at 2000-3000 and ranging up to 7000-8000. The largest firms increasingly find it difficult to find adequate amounts of space in South of Market buildings at rents they are willing to pay, particularly since many of the old buildings have inadequate wiring and fire abatement installations. However, the building requirements of the industry are not highly specialized. General industrial space, with relatively high ceilings and adequate light and wiring, is preferred. Only the South of Market area and the Mission District offer fairly large quantities of such space. As a result these are the preferred locations.

In the past there has been much discussion of possible apparel centers in the city to house many of the manufacturers or contractors or both. Conflicts between union and nonunion shops have been the major hurdle to acceptance of this idea.

Because of the need for frequent deliveries between manufacturers and sewing contractors, sewing and pressing contractors, and manufacturers and shippers, off-street loading and large freight elevators are preferred but are rarely available where many of the firms are located.

Since this is a labor-intensive industry, the industry pays the "gross receipts" tax on the basis of its payroll, which adds to total labor cost. This tends to make San Francisco less competitive with locations outside the city where there are not other compelling reasons to be in the city. To date there have been compelling reasons in the attractiveness of the city to designers and managerial personnel, a large labor force with skills in the industry, the availability of transit access for employees, and the availability of inexpensive loft space. Because of the industry's small investment in building and equipment, and the small inventories maintained, the total tax burden, including the payroll tax, the property tax, and the inventory tax, is not nearly as high per employee as in industries having a high investment per employee in plant and machinery.

3. Fabricated Metals Industry

This industry involves a large variety of industrial products and processes of production. Generally, firms can be broken into three types in terms of space and location requirements: those engaged in light metal fabrication, heavy metal manufacturing, and allied services such as metal polishing, plating, and coating. Most employment in San Francisco is in light metal products and metal product services, although there is some structural steel fabrication. Firms engaged in metal polishing, plating, and coating are generally small and prefer inexpensive, rental space. They tend to locate near their customers -- the metal fabricators -- or at a location central to them in old buildings, either single- or multi-storied.

Generally, metal fabricators prefer single-story buildings on inexpensive land with concrete floors to support heavy equipment. Firms in San Francisco have tended toward a southerly location, close to freeways and rail lines. Rail access is critical to firms engaged in heavy products manufacture and is often important to light metal product firms as well. One-story structures have been shown to permit substantial reductions in space requirements per employee. Average space requirements are 400 sq ft per employee.

Existing firms in metal product fabrication are unlikely to move often because of investment in heavy equipment which is expensive to dismantle and relocate. However, when expansion is required, if adjoining land or buildings are not available, a move will be forced and a move out of the city is likely for two major reasons: the relatively high cost of land, compared with locations on the Peninsula or in the East Bay; and the impact of the total tax burden in San Francisco on the industry. Due to heavy investment in equipment, the property tax burden can be significant in this industry, with the value of machinery often exceeding the value of land and buildings. When added to the payroll or gross receipts tax, the total tax burden per employee can be much higher than in surrounding counties, particularly compared with a location in South San Francisco. The preferred floor area ratio is about 1 to 4, permitting adequate on-site parking, loading, and storage of heavy materials. Typical firms have more than 100 employees.

In terms of in-city locations, South of Market, the Mission, Northern Bayshore, and the Potrero industrial districts all offer possible locations for metal services firms, whereas only areas south of China Basin Channel afford adequate locations for metal product fabricators who desire rail and easy freeway access, less expensive land, and single-story buildings.

However, firms are unlikely to move into San Francisco given the impact of taxes on their total costs compared to other areas and the relatively higher cost of land. As in the food industry, many of the buildings used in this industry tend to be fairly specialized, having high ceilings, mounted cranes, heavy floors, and wide column spacings. Generally total building size is large and not easily convertible into a series of smaller spaces. This results in an absence of much demand for available buildings except from the same industry or other industries sharing similar space requirements.

4. Printing and Publishing

There are four categories of firms in this group: publishers, commercial printers, bookbinders, and printing trade services, such as plate engraving. Generally all but the publishing houses and largest commercial printers prefer to rent space. San Francisco has never been a publishing center and little employment in this category is found in the city, other than in connection with local newspapers. Large commercial printers are not now attracted to the city since labor costs affect them significantly. They seek regions in which labor costs are low and maintain sales offices in major cities. To these printers, single-story space is preferred and land costs are not critically important.

Compared to the apparel industry, commercial printers, while using similar space, tend to pay higher rents and typically pay a higher proportion of total sales for rent. The typical firm is very small and space requirements for any one firm are not great, ranging from 5000-10,000 square feet. Space requirements are typically about 400 sq ft per employee. Heavy floors are required to support printing equipment, as is heavy electrical wiring. Transit access and a central location are generally preferred. For the highly competitive job printers, easy access to potential clients is very important because frequent communications are required and speed is often an essential part of the service offered.

South of Market has traditionally been and will also certainly continue to be the preferred location for the printing industry. Larger firms with national markets, undertaking work on long-term order, have less reason to operate plants in a central location and less reason to operate in the city at all. They also prefer single-story operations in order to place all production activities on one floor. It is reasonable to say that for the commercial printers, as for much of the apparel industry, there is no alternative location in the city to the South of Market and Downtown fringe areas.

Bookbinding is not a major activity in the city. A central location is not required and land and building costs can be reduced in fringe areas. Adequate storage space must be provided, preferably on ground floors in order to avoid the need for heavy floor loads on upper floors. As a result single-story structures are preferred.

5. Other Manufacturers

The site and locational preferences of other manufacturers in the city can generally be correlated with firm size. Small firms tend to rent, rather than own, and therefore to seek general industrial space in small quantities in older buildings at low rentals.

Manufacturers of heavy electrical and nonelectrical machinery generally prefer outlying locations because of lower land costs and typically require large amount of space per employee. Small machine shops and fine instrument production facilities have a greater tendency to a central location because of availability of repair services and suppliers and proximity to clients. Manufacturers of medical and dental equipment often cluster close to hospitals, whereas producers of food processing machinery may locate near food processors. Firms with national markets are sensitive to wage rates and may not locate in the region at all. Firms with local markets do seek a city location or one within easy range.

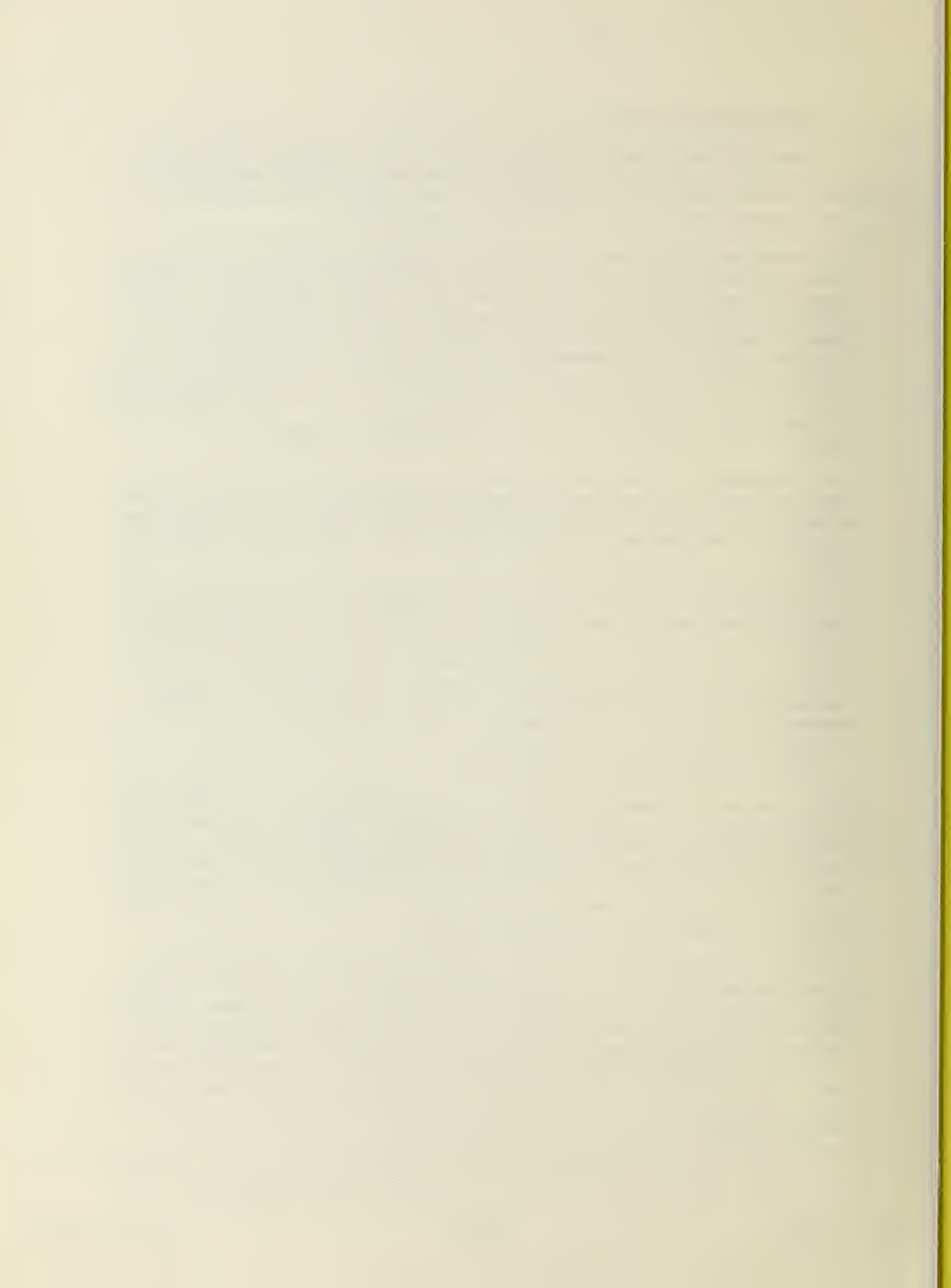
South San Francisco is becoming an increasingly receptive area to firms formerly located in San Francisco, particularly for firms requiring cheaper land in larger amounts, desiring ready access to air freight and rail lines, and seeking to avoid the city's relatively higher overall tax burden.

Some "high image" industries such as instrument and electronic manufacturing seek quality environments and are less sensitive to land and building cost than to the attractiveness of the area. Due to the overall decline in manufacturing in the city, many of its industrial areas are unattractive -- being dotted with abandoned or unmaintained buildings, crisscrossed with poorly planned streets and rail lines, and involving mixtures of open air storage, "messy" and clean industries.

6. San Francisco's Primary Attractions

Like most central cities, San Francisco offers two major advantages to manufacturing firms in a variety of fields: inexpensive, generalized industrial space in existing buildings and ready accessibility to various services, suppliers, and customers. Over time, however, the advantage of San Francisco in the latter category relative to suburban locations has declined as increasing numbers of industrial establishments have located outside the city in major industrial parks.

Thus, those industries still attracted to the city are generally those seeking the kind of existing space which the city offers. Most of this space is found either in South of Market or in the Mission industrial district. Since the South of Market area offers the largest potential supply of industrial space in varying quantities, it is the major receptor area for small firms. However, because it appears that new entrants cannot compensate for the loss caused by out-migration of major employers, the total demand for industrial space generally is declining and has been for some time.





IV. THE PRESENT AND FUTURE LOCATION OF ECONOMIC ACTIVITY IN SAN FRANCISCO AND THE IMPLICATIONS FOR COMMERCIAL AND INDUSTRIAL LAND USE

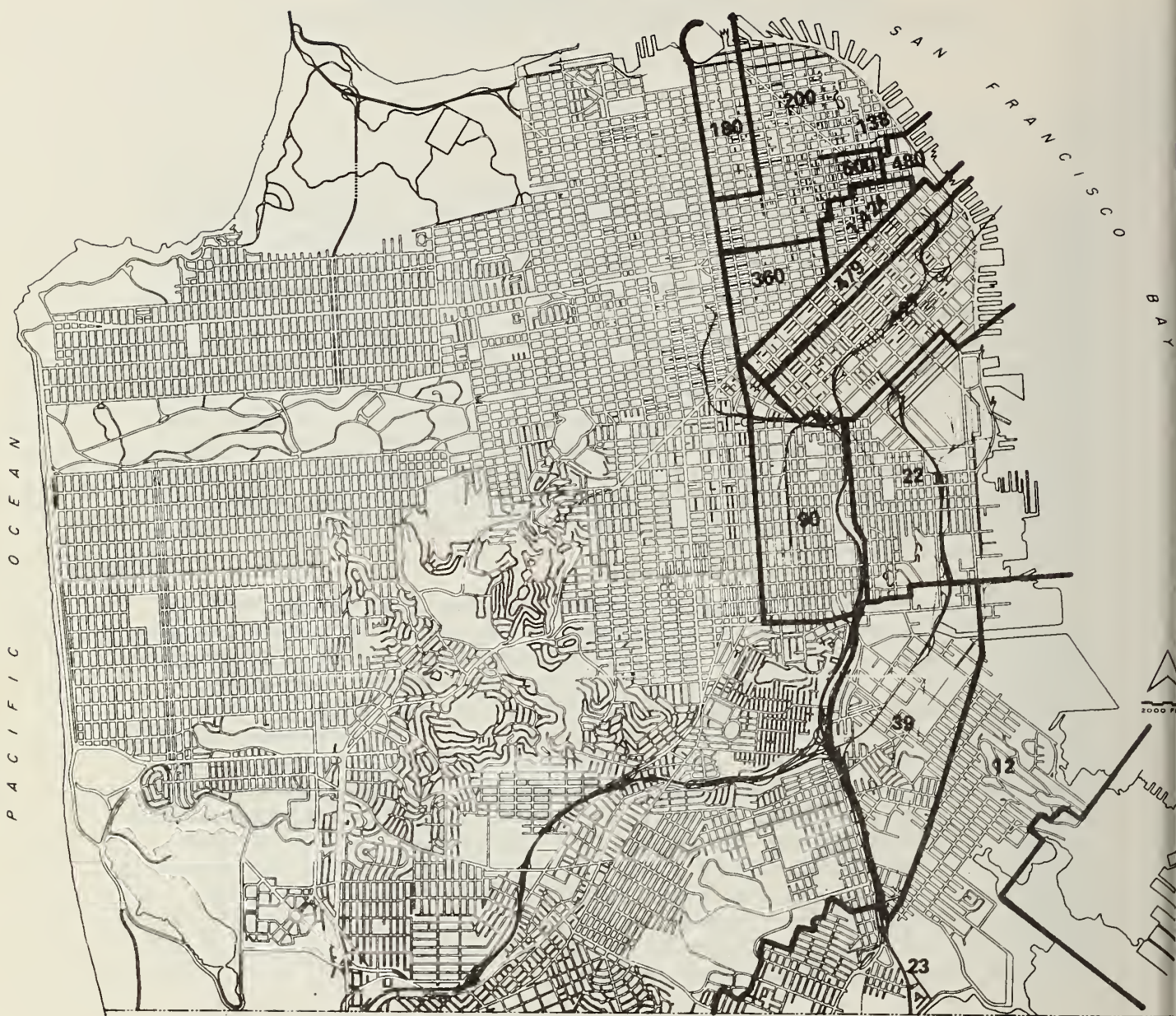
A. CITYWIDE ANALYSIS

Almost three-fourths of total employment in San Francisco has been and continues to be in the eastern third of the city, generally to the east of a north-south line corresponding with Van Ness Avenue. Sixty percent of total employment is located both east of this line and north of China Basin Channel. The central Downtown area, bounded generally by Pacific Avenue on the north, Van Ness on the west, and Howard Street on the south, alone accounts for almost half of total employment in the city although it contains only 3% of the total land area. Thus, economic activity, as measured by employment, is highly centralized in a relatively small area. As a result employment density (employees per acre of land in commercial, industrial, and utility uses) is highest in the financial district and drops off fairly rapidly to the north and west, and even more abruptly to the south. The least intensive use of land for economic activities is in the southeastern or more traditional "industrial" areas of the city. (See Figure IV-1.)

This has always been true and trends over the past decade have increased the centralization of employment in the city. By nature certain types of economic activities, particularly most forms of manufacturing, transportation, communications, wholesaling, and similar "industrial" activities have lower densities of employment for the amount of land occupied than the finance, retail trade, services, and government sectors. As a result, low employment density does not necessarily reflect a low level of economic activity. However, in the case of San Francisco, the level of economic activity throughout the city is fairly well represented by employment density for the reason that the growing sectors of the economy are those which occupy space most intensively, while the declining sectors are those making the least intensive use of land. Thus, the difference in employment density, as well as in level of economic activity, has been widening between those areas of the city chiefly housing these two different types of economic activity.

1. Employment Trends and the Location of Economic Activity

Total employment in the city increased 12% between 1965 and 1970, for a total gain of almost 60,000 jobs. That net increase was a composite of significant gains in certain parts of the city, reflecting the growth of particular sectors, offset by large declines in other areas housing other sectors of the economy. Overall, it is estimated that the eastern industrial and commercial third of the city dropped in total share of city employment, despite the fact that Downtown increased its share of total city employment. (See Table IV-1 and Figure IV-2.) This shift was due to the significant declines occurring in the traditional industrial districts,



Base Map Source: San Francisco Department of City Planning.

Sources: Arthur D. Little, Inc., estimates of employment derived from the U.S. Census of Population and Housing for 1970; land use data from San Francisco Department of City Planning, *San Francisco Land Use Tabulations for 1970*.

FIGURE IV-1 EMPLOYMENT DENSITY IN THE MAJOR COMMERCIAL AND INDUSTRIAL DISTRICTS OF SAN FRANCISCO – 1970
(employees per acre of land in industrial, commercial, and utility use)

TABLE IV-1

SAN FRANCISCO EMPLOYMENT TRENDS BY AREA - 1965-1970

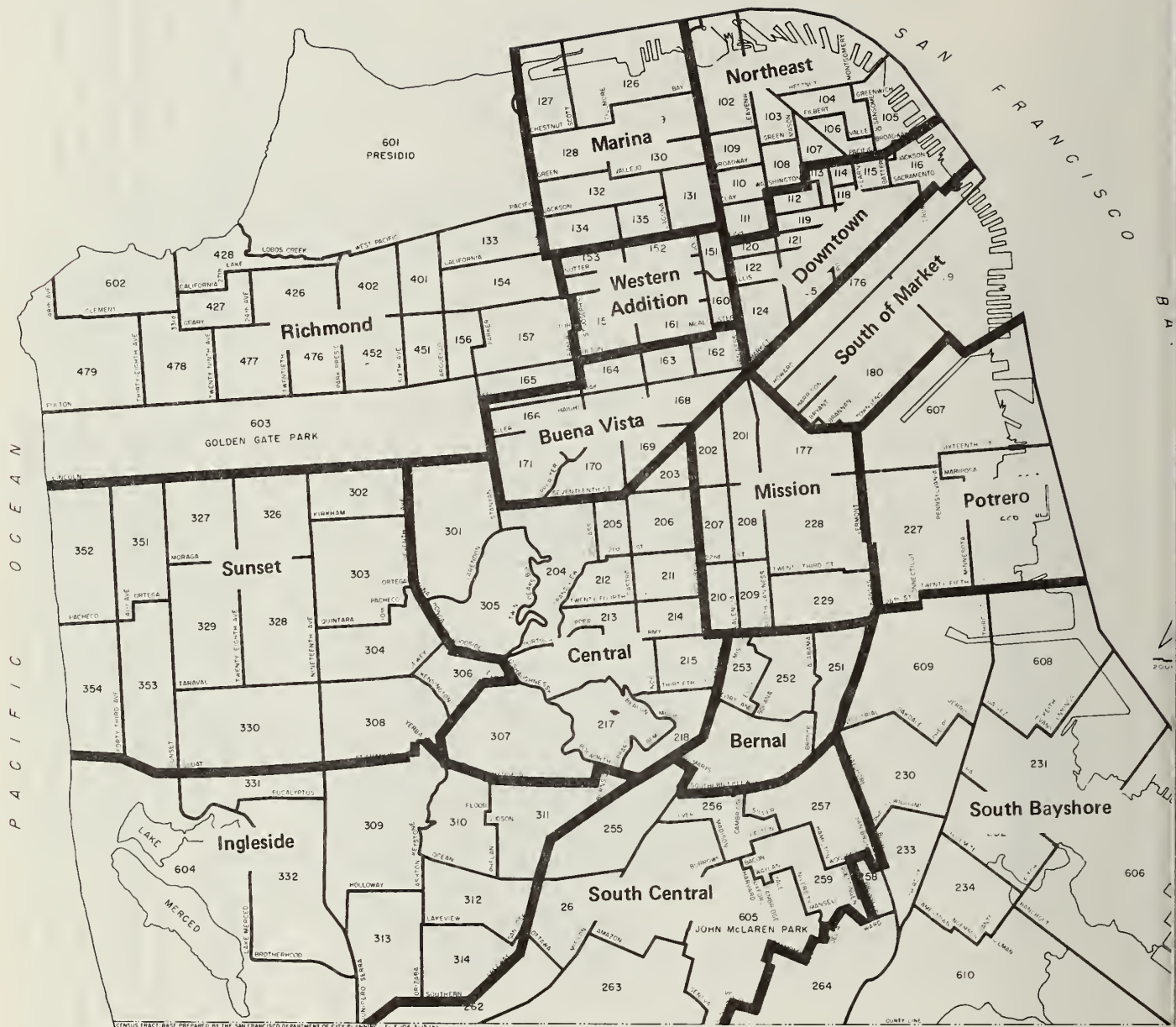
<u>District^a</u>	<u>1965^b</u>		<u>1970</u>		<u>Change 1965-1970</u>		<u>Percent of Net Change</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
Richmond	30,005	6.3%	31,577	5.9%	1,572	5.2%	2.7%
Marina	14,437	3.0	16,056	3.0	1,619	11.2	2.8
Northeast	20,930	4.4	25,154	4.7	4,224	20.1	7.2
Downtown	158,327	33.2	188,451	34.8	30,124	19.0	51.3
South of Market	102,184	21.4	114,382	22.0	12,198	11.9	20.8
Potrero	16,728	3.5	14,542	2.5	(2,186)	(1.3)	(3.7)
Mission	35,018	7.3	33,182	6.2	(1,836)	(5.2)	(3.1)
South Bayshore	31,761	6.7	24,084	4.5	(7,677)	(24.1)	(13.1)
Western Addition	14,384	3.0	15,521	2.9	1,137	7.9	1.9
Buena Vista	10,637	2.2	18,197	3.4	7,560	7.1	12.9
Central	11,248	2.4	16,591	3.1	5,343	47.5	9.1
Bernal	2,945	0.6	4,282	0.8	1,337	45.3	2.3
South Central	6,992	1.5	8,563	1.6	1,571	22.4	2.7
Ingleside	10,439	2.2	11,774	2.2	1,335	12.7	2.3
Sunset	10,413	2.2	12,844	2.4	2,431	23.3	4.1
Total	476,448	99.9%*	535,200	100.0%	58,752	12.3%	100.2%*

*Error due to rounding.

Notes: a. See Figure IV-2.

b. District totals may differ from those in subsequent tables due to absence of employment allocated to a specific sector in subsequent district tables, as well as boundary differences.

Sources: Data on employment by area and by type for 1965 were obtained from reports and printouts of the Bay Area Transportation Study Commission (predecessor to the Metropolitan Transportation Commission) derived from data furnished by the California Department of Economic Development. Data on employment by area and by type for 1970 were derived by Arthur D. Little, Inc., from information contained in the U.S. Census of Population and Housing and contained in special computer runs furnished by the Metropolitan Transportation Commission.



Note: These districts do not correspond precisely with the Department of City Planning's planning districts. They have been altered in order to focus on commercial and industrial areas having specific functions and to correspond with sources of available data.

Base Map Source: San Francisco Department of City Planning.

FIGURE IV-2 MAP OF DISTRICTS OF SAN FRANCISCO

where manufacturing, wholesaling, warehousing, and transportation uses have generally been concentrated and still remain as the predominant uses. Growth in the residential areas, unexpected given the decline in population, was apparently attributable to an increase in employment in medical and educational services, government, real estate, banking, personal services, and construction.

Downtown and South of Market accounted for about 72% of the net gain in employment and continued to increase their share of total employment in the city. However, the South Bayshore and Potrero districts lost substantial employment. Outside of Downtown, the largest shares of net new employment occurred in the northeast part of the city and in the central, primarily residential sections, including the Buena Vista, Twin Peaks, and Diamond Heights areas. All of the other, primarily residential, areas of the city also experienced an increase in employment, a reflection of the growth of employment in services, despite the decline in population. This trend also reflects a certain degree of decentralization of financial, real estate, and insurance activities, as well as the increasing attraction of the already well developed residential areas to institutional use.

As of 1970, Downtown (north of Market) accounted for an estimated 35% of total city employment and South of Market contained another 22%. Several areas grew more rapidly in employment than the city as a whole. Absolute amounts of new employment were by far the highest in Downtown, followed by the central parts of the city and South of Market. Employment in the Southern Bayshore district, containing the southeastern part of the city, declined by almost one-fourth while employment in the Mission district declined by about 5%.

The trend observed during this period is therefore toward increasing employment in those areas of the city already having the highest absolute amount and density of employment, not only in the traditional business districts but also in the residential areas, particularly in the central and northwestern parts of the city. This has meant additional pressure for development on land which has already been developed, resulting in higher density construction and use. At the same time, those areas of the city in the lowest intensity use are gradually ending up with more and more unused or very underutilized land.

2. Citywide Industrial and Commercial Land Use Trends

The only statistical data available on land use in San Francisco are those reported from the land use surveys made by the Department of City Planning in three successive periods: 1947-48, 1961-64, and 1970. Because the data are presented in the form of acres of land in broad categories of use, there is not necessarily any significant correspondence between trends shown by these data and employment trends. A considerable amount of judgment and knowledge of the areas involved is required in order to determine where such relationships exist. Trend information regarding floor space in use for particular purposes is only available for Downtown office space. Similar information does not exist for industrial and retail space and for other parts of the city. Data on industrial floor space was last collected in 1963 during the Community Renewal Program.

In the 1960s, despite significant new construction of office buildings, total land area in commercial use (which includes office uses) declined a small amount, as did land in industrial use. Only three broad categories of use increased in the city: residential, institutional, and public. The other major categories -- industrial, commercial, and utility uses -- decline. Table IV-2 indicates these changes. No information is available on changes since 1970.

a. Commercial Land Use Trends

As indicated by Table IV-3, land used for retail and office purposes in the city has been declining in amount, despite the observable increase in office space. This is due in part to the tendency toward construction of additional office space, and even retail space, at higher densities in Downtown, the only part of the city in which a substantial addition to the city's reservoir of such space has been occurring. As a result, additional commercial uses are being accommodated on less land, and land-intensive commercial uses, such as shopping centers, are not being built in San Francisco. The decline in retail and office use of land is probably due in part to elimination of considerable amounts of neighborhood retailing and small office uses in the Western Addition and South of Market by public and private redevelopment. The most significant increase shown is in the use of land for parking lots (and used car lots) reflecting interim use during redevelopment as well as a long-term trend between 1947 and 1970 resulting from increased parking demand. (The reduction in land reported in parking garage use is inexplicable.)

b. Industrial Land Use Trends

Land used for "industry" has declined since 1961, according to the City Planning Department's land use tabulations. There has also been a change in the nature of industrial occupancy, with a considerable decline in open air industrial uses offset in part by increases in structural uses. (See Table IV-4.)

A conversion of land from open air to structural industrial use would be consistent with trends toward higher land values and the economic justification for more intensive use of industrial land. It is difficult to believe the increases shown in structural heavy industry in light of the declines in manufacturing employment which have occurred during this same period and available data on industrial construction. One explanation is that vacant buildings are shown in their last known use. It is also likely that the increases shown are due to city-operated facilities classified as heavy industrial, such as the sewage treatment plants, storage and salvage yards, and similar uses. Data on acreages in industrial use do not provide a full picture of what is happening with regard to industrial space, any more than the commercial land use data account for commercial space. It is clear from observation and other information that occupied floor area in industrial use, at least in the "industrial districts," has declined, leading to higher vacancies.

TABLE IV-2

CITYWIDE LAND USE - 1947-48, 1961-64, AND 1970

	1947-48		1947-64 Change in Acres	1961-64		1964-70 Change in Acres	1970	
	Acres	Percent		Acres	Percent		Acres	Percent
Residence	8,239.65	36.97%*	794.46	9,037.11	40.0%*	77.20	9,114.31	39.45%*
Single-family Detached	2,089.17	25.36	(279.10)	1,810.07	20.0	34.01	1,844.08	20.23
Single-family Row	3,586.52	43.52	820.41	4,406.41	48.7	(171.53)	4,234.88	46.46
Two-family	1,020.49	12.38	94.01	1,114.50	12.3	60.07	1,174.57	12.88
3-4 Units	442.68	5.37	32.48	475.16	5.3	109.14	584.30	6.41
5-9 Units	235.90	2.86	77.05	312.95	3.5	49.80	362.75	3.98
10-49 Units	370.56	4.49	142.22	512.78	5.7	37.19	443.22	4.86
50+ Units							106.75	1.17
Rooming and Boarding	44.64	0.54	(11.18)	33.46	0.4	(2.15)	31.31	0.34
Hotel and Motel	22.66	0.27	19.95	42.61	0.5	0.47	43.08	0.47
Public	427.03	5.18	(97.86)	329.17	1.5	(39.80)	289.37	3.17
Commerce	1,232.57	5.53*	245.43	1,478.00	6.5*	(0.91)	1,477.09	6.39*
Retail and Office	819.52	66.48	94.30	931.82	63.0	(12.25)	919.57	62.25
Gas Stations	91.41	7.41	17.07	108.48	7.3	0.99	109.47	7.41
Parking Garage	80.89	6.56	(16.72)	64.17	4.3	(32.16)	32.01	2.16
Used Car and Parking Lots	92.08	7.47	211.49	303.57	20.5	96.15	399.72	27.06
Other Open Air	93.93	7.62	(44.95)	48.98	3.3	(32.67)	16.31	1.10
Wholesale	54.74	4.44	(33.76)	20.98	1.4	N.A.	N.A.	N.A.
Industry	1,253.96	5.62*	209.93	1,463.89	6.5*	(103.34)	1,360.55	5.88*
Structural Light	443.73	35.38	108.14	551.87	37.7	47.05	598.92	44.02
Structural Intermediate	254.99	20.33	60.22	315.21	21.5	(76.89)	238.32	17.51
Structural Heavy	261.53	20.85	(99.45)	162.08	11.1	137.82	269.90	19.83
Open Air Light	35.47	2.82	48.18	83.65	5.7	(1.58)	82.07	6.03
Open Air Intermediate	159.19	12.69	59.40	218.59	14.9	(141.06)	77.53	5.69
Open Air Heavy	99.05	7.89	33.44	132.49	9.1	(38.67)	93.82	6.89
Utility	1,071.57	4.80*	(117.38)	954.19	4.2*	(390.88)	563.31	2.43*
Truck or Bus	26.81	2.50	(22.83)	3.98	0.4	79.61	83.59	14.83
Railroad	300.39	28.03	(19.94)	280.45	29.4	80.97	361.42	64.16
Other	744.37	69.46	(74.61)	669.76	70.2	(551.46)	118.30	21.01
Public	5,397.51	24.22*	1,196.43	6,593.94	29.2*	1,000.78	7,594.72	32.87*
Private Recreation	298.26	1.33*	65.25	363.51	1.6*	(51.89)	311.62	1.34*
Vacant	4,439.15	19.91*	(2,168.01)	2,271.14	10.0*	(186.74)	2,084.40	9.02*
Open	3,593.41	80.94	(2,222.70)	1,370.71	60.4	(348.36)	1,022.35	49.04
Tidelands	710.68	16.00	65.01	775.69	34.2	174.07	949.76	45.56
Beach	124.06	2.79	0.68	124.74	5.5	(12.45)	112.29	5.38
Institution	352.32	1.58*	87.33	439.65	1.9*	156.03	595.68	2.58*
Private and Parochial								
Schools	91.40	25.94	51.86	143.26	32.6	7.17	150.43	25.25
Rest Homes	102.19	29.00	(25.68)	76.51	17.4	(52.37)	24.14	4.05
Hospitals	53.98	15.32	(7.31)	46.67	10.6	119.73	166.40	27.93
Churches	75.79	21.51	42.51	118.30	26.9	39.99	158.29	26.57
Convents, etc.	10.27	2.91	0.92	11.19	2.5			
Other	18.69	5.30	25.03	43.72	9.9	41.54	96.45	16.19
Net Area	22,284.99	100.00%		22,601.49	100.0%		23,101.68	100.00%

N.A. = Not available.

*Percent of total net acreage.

Sources: City of San Francisco, Department of City Planning, The Use of Land in San Francisco, October 1964; and San Francisco Land Use Tabulations for 1970, June 1973.

TABLE IV-3

COMMERCIAL LAND USE - 1961-64 AND 1970
(acres)

	<u>1961-64</u>	<u>1970</u>	<u>Change</u>
Retail and Office	952.80	919.57	(33.23)
Gas Stations	108.48	109.47	0.99
Parking Garage	64.17	32.01	(32.16)
Used Car and Parking Lots	303.57	399.72	96.15
Other Open Air	<u>48.98</u>	<u>16.31</u>	<u>(32.67)</u>
Total	1,478.00	1,477.08	(0.92)

Note: Wholesale, reported separately in 1961-64, has been consolidated with retail and office since most of such uses are reported as office uses in 1970. It should be noted that some wholesale uses are classified as "industry" in 1970, but since so much wholesaling occurs on upper floors of buildings, the use does not show up at all in the land use tabulations.

Sources: City of San Francisco, Department of City Planning, The Use of Land in San Francisco, October 1964; and San Francisco Land Use Tabulations for 1970, June 1973.

TABLE IV-4

INDUSTRIAL LAND USE - 1961-64 AND 1970
(acres)

	<u>1961-64</u>	<u>1970</u>	<u>Change</u>
Structural Light	551.87	598.92	47.05
Structural Intermediate	315.21	238.32	(76.89)
Structural Heavy	162.08	269.90	107.82
Open Air Light	83.65	82.07	(1.58)
Open Air Intermediate	218.59	77.50	(141.09)
Open Air Heavy	<u>132.49</u>	<u>93.82</u>	<u>(38.67)</u>
Total	1,463.89	1,360.53	(103.36)

Note: Changes in methods of classifying industries undoubtedly account for some of the shifts shown in the table. However, it is likely that the trend shown by changes in the total approximate reality and that part of the shifts may be accurate. Nevertheless, some uses shown as heavy industry in 1970 may not have been considered such in 1961. Also, the increase in "structural light" may be accounted for by the classification of some Wholesale Trade (SIC 50) and some Trucking and Warehousing (SIC 42) as light industry.

Sources: City of San Francisco, Department of City Planning, The Use of Land in San Francisco, October 1964; and San Francisco Land Use Tabulations for 1970, June 1973.

c. Other Economic Activities: Government and Institutions

An increasing share of San Francisco's total employment is found in activities not classified as industrial or commercial, especially in government and institutional services. Public and institutional land uses correspondingly show a substantial increase. Over 25 years, land in public uses has increased by more than 2000 acres. From 1961-64 to 1970 the recorded increase was 1000 acres, of which about 300 acres probably represent more accurate calculation. However, there is little question but that public uses have been expanding, some involving additional employment, others involving use of land for freeways or recreation.

Institutional uses have also increased their share of city land. (See Table IV-5.) Hospitals account for almost four times the amount of land occupied in 1961. The increase in medical services employment is consistent with this change. Most of these uses are not found in the major commercial and industrial areas of the city and account for a large share of the employment found in residential parts of the city.

TABLE IV-5

INSTITUTIONAL LAND USE - 1961-64 AND 1970
(acres)

	<u>1961-64</u>	<u>1970</u>	<u>Change</u>
Private and Parochial Schools	143.26	150.43	7.17
Rest Homes	76.51	24.14	(52.37)
Hospitals	46.67	166.40	119.73
Churches	118.30	158.27	39.99
Convents, etc.	11.19	96.45	41.50
Other	43.72		
Total	439.65	595.69	156.02

Sources: City of San Francisco, Department of City Planning, The Use of Land in San Francisco, October 1964; and San Francisco Land Use Tabulations for 1970, June 1973.

d. Vacant Land

Open vacant land has continuously declined since 1947. Between 1961-64 and 1970 almost 350 acres of vacant land were converted to some use, leaving about 1000 acres or 4% of the city's land area vacant. About 39% of that vacant land is zoned for industrial use and found in the major industrial areas. Most of the remainder is zoned residential and located on steep slopes. There is also substantial acreage in platted tidelands classified as vacant, located in the southeastern part of the city and zoned industrial.

e. Industrial Land Use and Occupancy in 1970

Most of the land in the city zoned for industry is occupied, although not all of it for industrial or related uses. Exclusive of industrially-zoned tidelands, the vacancy rate for industrial land is estimated at 16.2% or 390 acres as of 1970 (see Table IV-6). However, the vacancy rate varies significantly by area of the city. In the Mission, South of Market, China Basin, and Central Basin areas, less than 3% of the industrially-zoned land is vacant. The vast bulk of the city's vacant industrial land is found east of Third Street between Islais Creek and India Basin. Sizable parcels exist on both sides of Candlestick Park, next to the main entrance to the Hunter's Point Naval Shipyard, and in the India Basin Redevelopment Project. In the case of the land west of Candlestick Park, much of it is too steep for industrial development and has been recommended for open space and housing in the city's Comprehensive Plan. Thus, apart from the land now available for development at India Basin, very little vacant industrial land is available in the city in any one location.

In addition to the land classified as vacant, the land use tabulations and survey observations indicate a fair amount of land from China Basin Channel to Islais Creek which is now in low-intensity uses, such as open storage, railroad yards, and parking. The intermixture of occupied and vacant parcels and the use of many seemingly vacant parcels for storage appears to make these areas unattractive for high quality industrial development. However, overall occupancy of industrial land is not low. Available sites in major industrial parks in southern Alameda County amount to more than 10 times the land available in San Francisco and are not being absorbed rapidly.

The Department of City Planning's windshield survey, on-site inspection by ADL, and building permit data indicate the construction over the past several years of a number of new warehousing and wholesaling uses, particularly in the area between China Basin and Islais Creek. There is little evidence of new manufacturing uses and little would be expected on the basis of employment trends in this period.

There is also evidence of substantial vacancies of older industrial space, particularly space with specialized characteristics, scattered throughout the industrial districts, with concentrations in some areas, particularly along Third and Army streets. And, of course, the most significant vacated space of all is the Hunter's Point Naval Shipyard which previously employed in excess of 6000 civilians.

3. Industrial Concentrations and Trends in Location

Although San Francisco's economy is highly diverse and many different economic activities are found in almost all of its major commercial and industrial areas, there are some concentrations of specific industries or activities. As a result past and future changes in specific industries have had and will have differential effects on specific districts of the city, ultimately translating into new construction and expanded use of land for commercial and industrial purposes in the case of growth, or increasing building vacancies and contracted use of land in the case of declines.

TABLE IV-6

VACANCY OF INDUSTRIALLY ZONED LAND - 1970
(open land only, in acres)

	Zoned M-1	Zoned M-2	Total	Vacant	Percent Vacancy of Total	Percent Census Tract Vacancy of Total Vacancy
South of Market						
Census Tract 178	71.89	0.00	71.89	1.63	2.3%	0.4%
179	83.75	51.80	135.55	2.17	1.6	0.1
180	64.67	105.51	170.18	3.77	2.2	0.1
	<u>220.31</u>	<u>157.31</u>	<u>377.62</u>	<u>7.57</u>	<u>2.0%</u>	<u>1.9%</u>
Mission						
Census Tract 177	117.42	.77	118.19	1.08	0.9%	0.2%
228	59.88	1.41	61.29	4.30	7.0	1.1
229	10.14	0.00	10.14	0.04	0.4	0.0
	<u>187.44</u>	<u>2.18</u>	<u>189.62</u>	<u>5.42</u>	<u>2.9%</u>	<u>1.4%</u>
China and Central basins						
Census Tract 607	1.84	306.58	308.42	1.12	0.4%	0.3%
227	48.60	35.35	83.95	12.74	15.2	3.3
226	0.00	213.51	213.51	3.20	1.4	0.8
	<u>50.44</u>	<u>555.44</u>	<u>609.88</u>	<u>17.06</u>	<u>2.8%</u>	<u>4.4%</u>
Islais Creek-Army St.						
Census Tract 608	13.23	303.92	317.15	112.25	35.4%	28.8%
609	181.92	194.71	376.63	12.08	3.2	3.1
	<u>195.15</u>	<u>498.63</u>	<u>693.78</u>	<u>124.33</u>	<u>17.9%</u>	<u>31.9%</u>
India Basin						
Census Tract 231	33.43	60.41	93.89	62.13	66.2%	15.9%
Bayview North						
Census Tract 230	24.61	0.00	24.61	1.92	7.8%	0.5%
233	98.04	0.00	98.04	5.07	5.1	1.3
	<u>122.65</u>	<u>0.00</u>	<u>122.65</u>	<u>6.99</u>	<u>5.7%</u>	<u>1.8%</u>
Bayview South						
Census Tract 232	63.91	0.00	63.91	26.23	41.0%	6.7%
234	72.36	0.00	72.36	17.01	23.5	4.4
610	110.69	76.43	187.12	123.43	65.0	31.6
	<u>246.96</u>	<u>76.43</u>	<u>323.39</u>	<u>166.67</u>	<u>51.5%</u>	<u>42.7%</u>
Other						
Census Tract 264	6.06	0.00	6.06	0.05	0.8%	0.0%
Grand Total	1,062.44	1,354.40	2,416.89	390.22	16.1%	100.0%

Sources: City of San Francisco, Department of City Planning, San Francisco Land Use Tabulations for 1970;
and Arthur D. Little, Inc., estimates.

Available data on the location of specific types of economic activity in the city since 1965 are not very reliable. Within the next year, more reliable information should be available from the Metropolitan Transportation Commission. Therefore, the descriptions below reflect the best available data and judgments regarding trends in the location of specific industries. The focus is on those activities considered "industrial" -- manufacturing, trucking and warehousing, wholesaling, and certain business service and repair activities.

a. Manufacturing

Four industries comprise the bulk of city employment in manufacturing today: Food (SIC 20), Apparel (SIC 23), Printing and Publishing (SIC 27), and Fabricated Metals (SIC 34). Other once-important industries are Furniture (SIC 25), Paper (SIC 26), Chemicals (SIC 28), Primary Metals (SIC 33), Machinery (SIC 35), Electrical Equipment (SIC 36), and Transportation Equipment (SIC 37).

(1) Food Product Manufacturers (SIC 20)

• Location

According to available data, the largest concentrations of employment in this industry are in South of Market, near the Embarcadero, and in the Inner Mission. These two areas accounted for an estimated 40% of total employment in the industry in 1965 and may account for an even larger share today, due to declines in other areas. The eastern South of Market area is the home of the city's two major coffee roasting companies and miscellaneous food processing firms. Proximity to the port has traditionally been important, especially for the coffee industry and for some processors of imported goods.

The western edge of South of Market, near the Central Freeway, is the location of most of the city's dairy products and beverage industry and has accounted for about 10% of employment in food processing. Some meat product firms are also found in the western portion of South of Market. Freeway access and a central location with respect to the city's population were once important reasons for these locations. However, some firms are found in other areas. The Coca-Cola Company has a plant on Third Street in South Basin, built since 1965 on land the company has owned for some time.

Bakeries are scattered around the city, both in the major industrial districts and in some of the residential areas. The Inner Mission is the location of about 25% of the employment in the food industry due to the presence of some large firms which require delivery of raw products by rail. Rail access to this area from the port and from the south is available. Firms producing items dependent on bulk raw products, such as salad oil, rely on rail deliveries even if outgoing shipments are made by truck.

A small portion of the food industry is also found in the Potrero area and in South Basin north of Third Street. About 10% of employment in the industry was formerly located in the Islais Creek area, most of which has been lost through the relocation of meat packing firms from the India Basin (Butchertown) Redevelopment Project to sites outside the city.

- Trends in Location

Because of the fact that employment and the number of firms in the industry are declining, there are no observable shifts in the location of firms within the city. This industry is experiencing a gradual decline in employment. The area affected depends primarily on the firm which is re-locating or going out of business. No major new entrants in the industry have been noted and only two plants are known to have been constructed or expanded in the last decade -- the Coca Cola plant on Third Street and the Safeway coffee plant on 17th Street below Potrero Hill. Generally, food processors have been migrating toward the source of supplies, chiefly east to the Central Valley.

- Future Impacts of Employment Changes

Projected future declines of employment in this industry are likely to lead to further plant abandonments, chiefly in those areas which now contain the major firms in the industry -- South of Market and the Mission. With land values for alternative uses rising in Downtown, the eastern South of Market area appears particularly vulnerable to closing of remaining food processing plants and the sale of the land for office construction. The western part of South of Market and the Inner Mission are likely to see a more gradual decline in major food processing activities, although it is likely that the larger remaining breweries will close their plants in the near future.

(2) Apparel Manufacturing (SIC 23)

- Location

The apparel industry is mainly concentrated in a few areas of the city, almost entirely in central areas easily accessible to workers, services, and buyers. The two dominant concentrations have traditionally been Chinatown, nearby Downtown, and North Beach (31%), and South of Market (36%), chiefly between Market and Howard streets. In 1965, an additional 23% of employment was found in the Inner Mission, chiefly north of 17th Street, and another 6% was in Apparel City, south of Army Street.

- Trends in Location

This is the only major manufacturing sector which has been expanding in the city. As a result, firms have been expanding and changing locations; new firms have been formed. Both women's and men's wear have been expanding but the women's business is overwhelmingly dominant. As a result of expanding business, the search for more space by larger firms, the

elimination of older loft space South of Market, and zoning restrictions on shop size in Chinatown, there is a noticeable movement of the larger manufacturers south to the Mission and Potrero districts. The major women's wear manufacturers are almost all located in these districts or in the southernmost portions of South of Market.

Generally the firms which have moved involve managerial, design, sales, and cutting personnel. Since most of the manufacturers use contractors for much or all of their sewing, the locational shift for the manufacturers has not necessarily meant a major shift in employment. Specifically, the sewing shops in Chinatown and South of Market for the most part have not relocated, in part because of the lack of equal transit access farther south.

The manufacturers who move are the stable, large firms. They can afford the cost of buying a building and have a solid market on which to base their acquisition of adequate space. Most smaller firms remain in cheap, rented space (generally available only in South of Market). Sewing contractors and manufacturers with sewing shops, virtually all of whose employees are women and where wages are low, must have good transit access for employees. This is available Downtown and in South of Market.

● Future Trends

It is likely that a gradual southerly move of the apparel industry will continue in response to two main factors. First, if smaller firms expand and do well they must obtain additional space which is often not available Downtown, particularly at rents they are willing to pay. Secondly, there is a sizable concentration of apparel manufacturers east of First Street which may be forced to move as a result of private redevelopment for high-rise office buildings. While South of Market often provides suitable space for the apparel industry, there are fewer suitable buildings available in the Mission and Potrero districts. Many of the buildings in these latter areas are too large for apparel manufacturers or have very specialized layouts. Therefore, it is likely that the industry will attempt to keep close to Mission Street, making use of space available in the large number of multi-story commercial and industrial buildings in the South of Market area. However, a new concentration of the industry does appear to be developing along 16th and 17th streets between Folsom and Third.

Future growth will probably be reflected chiefly in employment by sewing contractors. They are likely to continue to be concentrated chiefly in and around Chinatown, although the larger contractors can be expected, once established, to move south where more space can be obtained. Thus the share of the industry located in South of Market and even farther south in the Potrero, Mission, and Apparel City areas will increase, if the industry expands.

(3) Furniture Manufacturing (SIC 25)

The furniture industry is small and has remained fairly stable. Apparently a large share (about half) of total employment consists of administrative and sales personnel for firms whose production is elsewhere. As a result, significant concentrations of the industry are shown by the data to be in the Northern Waterfront area (35%) where a major furniture showroom is located. Other manufacturers' representatives are found in South of Market. Actual production facilities and productive employment are concentrated in the Mission (12%), Apparel City (12%), and the South Basin (11%). Custom furniture manufacturers seem to be scattered throughout the city in small shops. Since the industry is stable there have been no noticeable shifts in location, except for the movement of some small firms into the Mission. No problems in accommodating this industry are expected.

(4) Paper Products (SIC 26)

Although there are headquarters and sales offices for major paper product manufacturers there is little actual employment in conversion or production activities. About 40% of total employment appears to be in non-production activities. What production does exist is concentrated in the Mission (one large envelope manufacturer), the Central Basin, and South of Market. No pressures toward relocation in these areas are evident or likely.

Pier 45 and Piers 15-17, the newsprint terminals, account for a substantial share of total employment in the industry. If Crown Zellerbach is forced to move by new development at Pier 45, a new pier facility will have to be found for receiving and storing newsprint, probably south of the Bay Bridge. Since almost all of the newsprint moving through the port is destined for the San Francisco and San Jose newspapers, any location on the central or southern waterfront should prove satisfactory.

(5) Printing and Publishing (SIC 27)

Three-fourths of total employment in this major industry is found Downtown and in South of Market, chiefly north of Folsom Street. South of Market is, of course, the location of San Francisco's three major newspapers, as well as the major commercial printers, both of which account for most of the industry's employment in San Francisco. Commercial printers are also found in the Mission, the Potrero-China Basin area, and in the Northern Waterfront. The commercial printers cluster as closely as possible to the center of the business district where the majority of their clients are located. There has been no movement of firms of any significance within the city; relocation of a printing operation is very expensive due to the heavy machinery involved. As a result, moves would occur only rarely. To the extent that there has been migration, it has involved the movement of firms out of the city into other states, particularly Midwestern and Rocky Mountain states. Those firms which have moved do mass printing on long-term order for nationwide clients.

The industry is expected to remain stable or decline slightly in employment. Any decline would be felt chiefly South of Market as a result of future moves of large-scale producers to other states or localities where less expensive land and labor are available.

(6) Chemicals and Allied Products (SIC 28)

This industry represents relatively little employment, half of which is in paint manufacturing. Plastics fabrication has disappeared. A few paint manufacturers determine the locational distribution of most employment, found in the Northern Waterfront, the Potrero-China Basin area, and the Mission. The drug industry is small but has been expanding, apparently in South of Market and on the edge of the financial district. Since operations are small (average firms size is less than 25 employees), there has been no apparent need for larger buildings found in the southern part of the city.

(7) Primary Metal Industries (SIC 33)

This industry has almost nonexistent production activity in San Francisco. About half of total employment in the industry is headquarters and administrative employment, located in Downtown offices. Non-administrative activities are located chiefly in the Northern Waterfront, the Mission, and Islais Creek areas. Since 1965 about one-third of employment has been lost, due to the relocation of firms previously involved in steel rolling and finishing. The few remaining ferrous and nonferrous foundries are located in South of Market and in the Islais Creek-Army Street area. Rail access is important to this industry.

(8) Fabricated Metal Products (SIC 34)

In terms of employment, this has long been a major industry in San Francisco. After several years of stability a substantial drop in employment occurred, in large part due to the closing of the American Can Company plant on Third Street in the Central Basin and relocation of many employees at the Soule Steel plant on Army Street during the past six years.

The Central Basin area previously accounted for 15% of total employment in the industry. The largest single concentration of employment was in the Army Street-Islais Creek area where large fabricators of structural steel were located close to the port, rail lines, and freeways. The large firms have now moved their plants out of the city due to various factors -- increasing centralization of production in fewer plants located to serve a national market, the search for cheaper land for large single-story plants, and the lower tax rates in other areas on property and machinery.

Other significant concentrations of employment are found north of Potrero Hill where one manufacturer of metal cans is located and near the county line where Schlage Lock Company has a plant. As a result there are

no unique agglomerations of firms in the industry. Due to past and recent relocations of large firms, what is left of the industry consists of many small firms scattered through South of Market, the Inner Mission, and the South Basin areas. There has been no tendency toward relocation within the city to specific locations due to San Francisco's unattractiveness to the industry as explained in Chapter II. The larger firms have had the same locations for many years, relocation of machinery being quite expensive. A manufacturer now located on Market Street west of Van Ness Avenue is planning a move to South San Francisco to obtain more space.

If the industry continues to decline as projected, the impact will be felt chiefly in the Inner Mission and South Basin areas where current employment is now concentrated.

There does appear to be some tendency for small firms in this industry to locate in areas of the city where the primary metals industry is also located, presumably because their supplies come from local foundries. Firm size appears to be a primary determinant in choice of location due to the impact of size on space needs.

(9) Machinery, Except Electrical (SIC 35)

There are almost 100 firms in this industry of which only three or four are large. Because of the number of small firms, employment in the industry is concentrated within the city in South of Market, south of Howard, and to a lesser extent, in the Mission where cheap rental space is available in varying quantities. These areas account for about 70% of employment in this industry. The South Basin area is another location for this industry. Employment has declined over the last several years and there have been no significant changes in location within the city, although there have been relocations out of the city by the large, expanding firms.

(10) Electrical Equipment and Supplies (SIC 36)

According to 1965 data, half of the employment in this small but growing industry was in South of Market below Howard Street. Other small concentrations were in the Mission and in South Basin. Since 1965 there has been a reported increase in employment in this industry. South of Market has apparently been the favored location for this industry, due to the availability of inexpensive space for small, growing firms. This industry indicates how South of Market's reservoir of older buildings provides opportunities for the accommodation of small firms in a nationally expanding industry. However, overall employment is insignificant and large firms are not found in the city.

(11) Transportation Equipment (SIC 37)

Virtually all of the employment in this sector is in shipbuilding and repair, located on or near port facilities. The dominant employer is Bethlehem Steel, located in the Central Basin. Some other firms are located in the lower Howard-Harrison area near Piers 26-46 but the preferred location appears to be the Central Basin area due to the availability of space, lower costs, and less congestion.

Much of the employment in this activity, actually reported as government employment, was at Hunter's Point Naval Shipyard until its closing. One major ship repair firm also closed during the past five years, resulting in a sharp decline in employment (more than 500 jobs); another component of declining employment has been the relocation of motor vehicle manufacturers (truck trailers and campers) out of the city. That part of the industry was located in the Central Basin area and in the Mission district; its relocation has contributed to the overall decline of employment in those parts of the city.

(12) Summary of Manufacturing Locations

According to available data there has been a substantial decline in employment in manufacturing formerly located in the Potrero-Central Basin, Mission, Army Street-Islais Creek, and Northern Waterfront areas. (See Table IV-7.) This occurred because industries once in these locations have declined as a whole and no significant new manufacturing activities have entered to take their place. In the case of South of Market, however, new manufacturing activities and the growing apparel industry have contributed to the maintenance of fairly stable manufacturing employment in the face of citywide declines. This appears also to be true of the southernmost industrial area of the city near the county line and of the Chinatown-North Beach area where small apparel contractors predominate.

As local firms expand, they ultimately seek more space at locations where larger land parcels are available at lower cost and where room for future expansion is secured. As a result the industrial areas of the city which have traditionally housed large plants have been abandoned in favor of suburban or even more distant locations. On the other hand, the large number of small firms engaged in some manufacturing activity seek small amounts of space in older buildings which are available chiefly in South of Market and parts of the Mission.

As this process continues, the older large and specialized plants in the Central Basin-Potrero, Army Street-Islais Creek, and South Basin areas are abandoned. The South of Market area seems likely to maintain a role as a location for small firms in a variety of manufacturing activities, although less in the future than in the past.

Apart from the influence of available inexpensive space as an important factor in the location of the apparel and printing industries and small firms in various types of manufacturing, there are few other key determinants affecting the location of manufacturing within the city among the existing industrial areas. San Francisco is sufficiently small that a choice of location within the city is of little importance in terms of transportation costs. For a few types of activity, such as ship repair, primary metals, and some food processing, rail and port access are important. For the apparel industry and for firms with high clerical employment, transit access for employees is critical.

TABLE IV-7

ESTIMATED CHANGE IN THE LOCATION OF EMPLOYMENT IN MANUFACTURING

District	Percent Share of Manufacturing Employment				Net Change 1965-1970
	1965		1970		
	Number	Percent	Number	Percent	
Northeast	5,251	8.4%	4,327	7.3%	(924)
Downtown	10,949	17.5	12,237	20.8	1,288
South of Market	20,081	32.2	20,947	35.6	866
Potrero	5,851	9.4	3,763	5.0	(2,088)
Mission*	9,419	15.1	8,248	14.0	(1,171)
South Bayshore	8,735	14.0	7,950	13.5	(785)
Subtotal	60,286	96.6%	57,472	97.6%	(2,814)
Other	2,094	3.4	1,439	2.4	(655)
Total	62,380	100.0%	58,911	100.0%	(3,469)

*In this table the Mission and South Bayshore are those districts shown in Figure IV-2.

Sources: Data on employment by area and by type for 1965 were obtained from reports and printouts of the Bay Area Transportation Study Commission (predecessor to the Metropolitan Transportation Commission) derived from data furnished by the California Department of Economic Development. Data on employment by area and by type for 1970 were derived by Arthur D. Little, Inc. from information contained in the U.S. Census of Population and Housing and contained in special computer runs furnished by the Metropolitan Transportation Commission.

b. Transportation, Communications, and Utilities

This category of employment includes a diverse group of activities involved in the storage and movement of goods, private transit and taxi services, communications, and utility services. Since the nature of many activities involves movement, the place to which an employee reports for work or where he is paid is not a meaningful indication of the area distribution of employment. The focus of this section is on Trucking and Warehousing and Transportation Services because space and land requirements are directly related to employment and location.

(1) Trucking and Warehousing (SIC 42)

This activity includes trucking, with and without storage, and public warehousing. The bulk of employment reported for this activity is in Trucking without Storage (SIC 4211), and both trucking with storage and warehousing employment have declined over the past decade. Warehousing activities in general have a relatively low rate of employment proportional to the amount of land and space used. In addition, many wholesalers, retailers, and manufacturers maintain their own warehousing facilities, and employment involved in such warehousing is reported under the specific industry. The port also provides warehousing for its clients on piers or on port land.

Employment in these activities is generally concentrated in the area between China Basin Channel and just south of Islais Creek close to the waterfront. In 1965, reported employment in trucking and warehousing in this area (including the Army Street-Apparel City area) accounted for 43% of the city total. Other concentrations of employment, particularly in general warehousing, a more land-intensive activity in San Francisco, were in South of Market, chiefly below Howard Street (26%) and in the Inner Mission (8%), a subsidiary trucking and warehousing center.

In terms of land use, the China Basin-Central Basin area accounts for about 60% of total land used for trucking operations in San Francisco. It also accounts for about 80% of land devoted to railroad operations. It is clear that this area is the freight transportation center for San Francisco, highly accessible to the Downtown business district, the industrial areas, the port's major facilities, and freeways. Although there has been some decline in employment in this industry, there have been few changes in facilities. Some additional trucking and warehousing facilities have been constructed over the past decade in the China Basin-Potrero area, but there has been no large-scale construction of new warehousing.

Much of the necessary storage in San Francisco for waterborne goods is provided on the piers. As containerization has increased, open storage has become more common on the port's new southern facilities at Piers 80, 94, and 96. Break-bulk goods storage is provided in pier sheds throughout the Northern Waterfront. Most public warehousing for general merchandise is located in South of Market in multi-story buildings near wholesalers, retailers, and small manufacturers. Many retailers maintain their own warehouses in the same area.

With employment projected to decline somewhat in this category, some impact is likely on land use. However, declines in employment are due as much to changes in the technology of goods handling as to relocation of firms. The two often do go hand in hand as warehousemen requiring more mechanized operations seek larger single-story buildings in outlying areas.

Trucking operations are increasingly centered in areas where adequate space can be obtained for truck storage and the movement of larger trucks and near the port's container-handling facilities. As indicated, land for such uses in San Francisco continues to be found almost wholly in the China Basin, Central Basin, and Islais Creek areas, desirable locations in terms of access to the port, to downtown customers, and to freeways.

(2) Transportation Services (SIC 47)

This category includes two major types of employment: freight forwarding and arrangement of transportation. The latter includes travel agents, involving personnel in offices or in ground-floor commercial space. Employment in this activity has been increasing much faster than employment in freight forwarding (57% compared to 25% from 1965 to 1972). As would be expected, travel services are concentrated Downtown. The freight forwarders are located chiefly in South of Market, the Northern Waterfront, China Basin, and the Mission.

(3) Water Transportation (SIC 44)

Employment in this category is all port-related and therefore chiefly "located" on port facilities or on ships based in San Francisco. A detailed study of port facility needs was beyond the scope of this study. A number of past studies have addressed the question of needs for new facilities.*

Since those studies, the port has been constructing major new facilities to accommodate containerized cargo, as well as non-containerized cargo. These facilities are located at Army Street and between Islais Creek and India Basin. Prior studies suggest lack of need for any other new major facilities for an indefinite period. There have in the past been long-term plans for a new container terminal at Pier 72 and a major general cargo terminal at Pier 56. Due to technological changes in cargo handling, increases in employment do not necessarily follow from the construction of new facilities, particularly container facilities. For example, a study by Stanford Research Institute indicated that construction of a new container terminal at Pier 72 for a cost of \$12.5 million would only create 150 new jobs.** Projected changes in employment in water transportation are not, therefore, directly related to facility or land requirements.

*See, among others, two studies by Arthur D. Little, Inc., The Port of San Francisco - An In-depth Study of Its Impact on the City, Its Economic Future, and the Potential of Its Northern Waterfront, 1966, and San Francisco's Maritime Future: Revolution and Response, 1967; Stanford Research Institute, Development Alternatives for San Francisco's Potrero Point Shipyard Site, 1969.

**Op. cit.

On the other hand, shipping and cargo volume can affect the demand for space on or near port land and piers for a few activities, such as import-export wholesalers, machine shops, and drayage firms. Transportation and storage activities account for nearly all of port property in use.

While changes in the amount of shipping through the port will have an influence on the need for docking and storage space, very little impact is expected on the demand for space for other activities either on or near port facilities. Much port property is now leased for non-maritime and nonindustrial uses due to the absence of demand for space by port-related activities.

c. Wholesale Trade

Wholesalers are primarily of two types: those who maintain stock in trade in warehouses and those who do not. A more refined classification distinguishes between merchant wholesalers (who employ warehouses for assembly, storage, and distribution of goods), manufacturers' sales representatives, and wholesale agents and brokers. Neither of the latter two groups requires much or any warehousing space. They utilize offices and display space and, occasionally, some warehousing space in the case of manufacturers' sales branches.

Available data from 1965 indicate that employment in wholesaling was concentrated in South of Market and the financial and administrative district (60%). Land use data for 1970 indicate a continued predominance of this central area, as well as the fact that most of the employment in these areas consists of wholesale agents and brokers and manufacturers' sales representatives who do not maintain stock in trade. Thus, in this part of San Francisco, wholesaling is primarily an office activity.

The preeminent location for wholesalers' offices has been and continues to be the corridor between Market and Howard streets. Merchant wholesalers are more often found farther south along Folsom, Bryant, Harrison, and adjacent streets, as well as in the Mission, Potrero district, and the Apparel City-Produce Market area. Increasingly wholesalers who must maintain a stock in trade move their warehouses farther south in the city or to suburban locations to obtain less expensive land and building space.

Movement of the produce markets from the Northern Waterfront to a location south of Army Street and to South San Francisco has, of course, caused a major shift of employment in grocery wholesaling. Apparel, liquor, and many other wholesalers continue in South of Market to be accessible to customers and because building space remains available. Available land use data suggest that retailers have an increasing tendency to maintain their own warehouse facilities, which reduces the demand for storage by wholesalers. Of the identified warehouses in South of Market, most are maintained by retailers or manufacturers rather than by wholesalers.

For merchant wholesalers available data and observation indicate that South of Market remains a major wholesaling center for nondurable goods, while the Central Basin and Apparel City areas are used for durable goods storage by wholesalers. These durable goods include electrical equipment, machinery, construction materials, and similar goods -- the latter obviously bulkier and more difficult to store, requiring either open land or single-story structures.

Available data for 1970 suggest that, despite the continued dominance of Downtown and South of Market in wholesale trade employment, more southerly areas, including the Mission, Central Basin, and Produce Market areas, have increased their share. This change in the relative distribution of employment has apparently resulted from two factors: (1) an absolute decline in employment in wholesale trade, particularly of sales and clerical personnel, in the Downtown and South of Market areas, and (2) relocation of wholesalers necessitated by new private office development Downtown and public action, such as the Golden Gateway Project, which required relocation of grocery wholesalers. Some new construction of warehouses and wholesalers' offices along the Third Street corridor has occurred within the past several years. During the past 10 years 17 new warehouses have been constructed in the city, with an estimated value of almost \$6 million, according to building permit data.

- d. Centralized Commerce: Finance, Insurance, and Real Estate (SIC 60-68), Miscellaneous Business Services (SIC 73), Legal Services (SIC 81), and Miscellaneous Services (SIC 89)

The city's major commercial activities -- increasingly the dominant component of San Francisco's economic base -- are the most centralized economic activities in the city. In 1965, 70% of employment in finance, insurance, and real estate was located in and immediately around the financial district (Census Tract 117) and in the Market-Howard corridor, east of Fifth Street. Expansion has occurred to the north into the Golden Gateway area and to the south along Market and Mission, and north-south streets east of Third Street. This enlarged financial district accounts for somewhat over 75% of FIRE employment. There has also been significant construction and new employment locating north of the Golden Gateway project in the Northern Waterfront area. Business services, legal services, and miscellaneous services oriented chiefly to business demand, such as architecture, engineering, and accounting, have, of course, located in the same areas, as well as in and around the Civic Center.

Data from 1965 indicate a concentration of Miscellaneous Business Services (SIC 73) employment in the financial district and in the Market-Howard corridor (43% of the total). 1970 data indicate a continuation of this pattern and increases in the Northern Waterfront. It is apparent from the location of much employment in the miscellaneous business services category that most of this employment is office-type activity. However, there is a significant amount of employment in business services south of Howard Street where more industrial-type space is available. It is also in these locations that many repair services are found.

Locational trends in FIRE, Miscellaneous Business Services, Legal Services, and Miscellaneous Services are clear. Most new employment is being accommodated in more intensive development within the financial district and by new and much more intensive development in the Golden Gateway and Northern Waterfront, and the eastern part of South of Market. As a result, employment density in these areas has been increasing dramatically.

Future employment in these industries is expected to locate in a band wrapping around existing concentrations and expanding north, east, and southwest around the financial district. Yerba Buena Center, with substantial office construction planned, is expected to provide the southwesterly terminus of the main concentration of these activities. Additional development which does not locate in Yerba Buena Center will tend to locate to the east of Third Street south as far as Folsom and around the Civic Center. The magnitude of potential office development and its implications are discussed in more detail below.

- e. Institutional Employment: Medical and Other Health Services (SIC 80), Educational Services (SIC 82)

The medical services industry accounts for rapidly expanding employment in the city, particularly at private hospitals. There has also been expansion of government medical facilities in the city, specifically the University of California Medical Center, San Francisco General Hospital, and Letterman General Hospital in the Presidio. Employment data for SIC 80 include only private medical employment.

In 1965 half of total private medical employment lay in a corridor stretching through the Western Addition and into the Inner Richmond on both sides of Geary Boulevard, where most of the city's major private hospitals are located. Another 25% was located east of Van Ness Avenue, chiefly in midtown and Downtown, the traditional center of medical offices. An additional 7% and 10%, respectively, were located in the Buena Vista area and the Mission, locations of several other hospitals and medical centers.

Although comparable data for 1970 are not available, certain trends in the location of medical and health services employment are clear. In 1965 only 40% of total private medical employment was classified as being associated with hospitals, with most of the remainder classified under doctors' and dentists' offices. By 1972, 55% of total private medical employment was at hospitals, so that almost 80% of the net increase in employment during this period was associated with hospitals. This has clearly resulted in higher employment in those areas where the major hospitals are situated, chiefly the Western Addition-Inner Richmond corridor. In addition, increasing employment in governmental medical services has caused increases in employment at state-operated U.C. Medical Center and at San Francisco General Hospital.

Employment in doctors' offices has increased in the same areas, particularly in the Western Addition, and there has been an apparent relocation of doctors toward these areas, into offices made available by the larger hospitals or into nearby medical office buildings. Employment in educational services is somewhat less concentrated although some major institutions are located in the Inner Richmond and Buena Vista areas, contributing to the concentration of institutional employment there.

Growth in these industries and their location in the primarily residential areas of the city are responsible for a large part of the otherwise unexpected westward shift in employment from the eastern third of the city.

f. Retail Trade (SIC 52-59)

Data for 1965 indicate that 45% of retail trade employment in the city was located in the area east of Van Ness Avenue and north of Market Street. An additional 15% was found in South of Market. The only other significant concentrations of retail employment were in the Inner Mission (8.7%) and in the Ingleside area, including Stonestown Shopping Center (3.8%).

According to the 1967 Census of Retail Trade, the area defined as the "central business district"* accounted for 40.4% of total retail trade employment in the city but only 31.9% of total retail sales. According to 1965 data, this same area had 42.4% of total retail trade employment in the city. Since the Census of Retail Trade does not include employment by non-store retailers (e.g., mail order houses) there is no reason to believe that Downtown's share of retail trade employment declined from 1965 to 1967.

According to available data for 1970, this same central business district accounted for about 48% of total retail employment in the city. The data show the larger area east of Van Ness and north of Market with 55% of city employment in this sector, suggesting an increase in both actual retail employment in the area and its share of citywide employment. Since the data are not wholly reliable, it is not known whether such a large increase occurred. Increased employment could easily have resulted from shifts in the composition of downtown retailing to more employment-intensive activities (compared to dollar volume of sales), such as eating and drinking places and specialized apparel stores. According to the 1967 Census of Retail Trade, the CBD had one-third higher employment relative to sales than the rest of the city. By contrast sales per employee are 28% higher in other parts of the city overall and in those retail sectors which dominate non-Downtown retailing, such as food and general merchandise.

Because the city's population has been declining, increases in retail sales are due primarily to increased demand by nonresidents, including tourists, commuters, and nonresident shoppers from surrounding counties. This shift in the source of demand accounts for some of the increase in

*The district is defined as including 1970 Census Tracts 115, 117, 121, 123, 124, 125, and 176; thus including the financial district, retail, hotel, and entertainment districts, the Civic Center, and the Market-Howard corridor, but excluding the Golden Gateway area and Chinatown.

retail employment in the northeastern part of the city and a declining share in the western residential areas. In addition, if 1970 data are accurate, the trend established between 1963 and 1967 toward a declining share of retail employment for the CBD has been reversed.

The future distribution of retail trade employment will depend primarily, although not entirely, on changes in resident population and buying power. Downtown retailing and retail employment in the northeastern part of the city will be more responsive to changes in tourism and new employment, while retail trade in the residential areas will vary according to resident population.

On the basis of recent estimates of demand for retail goods and services by downtown employees,* it can be estimated that only two new jobs in retailing are created for every 100 new nonresident employees in the city. One of these two jobs will be in eating and drinking places. For visitors to the city, including convention-goers, business visitors, and pleasure-vacationers, one new job in retailing is estimated to be created by each additional 100 visitors with 85% of the new jobs in eating and drinking places.** Convention visitors contribute more to retail employment than pleasure-vacationers or business visitors because of their higher spending in restaurants and retail stores.

The ratio of employment in retail trade to resident population is not known but is definitely much higher than that for visitors or commuters. As a result, changes in retail employment in the city as a whole and in particular areas reflect and will continue to reflect changes in the number and location of residents and their relative buying power. Increased tourism and related employment have helped offset losses in retail employment resulting from declines in city population chiefly because of the high employment associated with eating and drinking places per dollar of sales (estimated at one employee per \$17,000-18,000 in sales).

g. Hotels and Other Lodging Places (SIC 70)

Employment in this industry is highly concentrated. The area east of Van Ness Avenue and north of Market Street accounted for 80% of total employment in hotels and motels in 1965. The corridor between Mission and Howard from the Embarcadero to 11th Street accounted for an additional 12%. The area around Union Square and Nob Hill alone accounted for about 60% of city hotel employment.

*Background studies for the report by the San Francisco Planning and Urban Renewal Association, Impact of Intensive High-rise Development on San Francisco, 1975 (not yet published).

**Derived from estimates of spending by visitors found in the San Francisco Convention and Visitor Study by the Institute for Business and Economic Research at California State College, San Jose, 1971-1972.

Data on the distribution of employment since 1965 are not available. Visual observations do indicate some changes which are occurring, however. Much of new hotel construction has been concentrated in the same areas where employment was concentrated in 1965 but there has been substantial construction as well in the Northern Waterfront area near Fisherman's Wharf and one new major hotel (the Hyatt Regency) has been constructed in the Golden Gateway Redevelopment Project. Hotel construction in Downtown, on Nob Hill, and in the Northern Waterfront results both from the large fixed investment in existing space to which additions can be made more economically than relocation, as well as from the desire of tourists to stay in those parts of the city which are already established visitor and entertainment centers. In terms of visitor attraction, this industry benefits from agglomeration effects associated both with concentration of the industry itself and with concentration of entertainment services and retail trade.

h. Entertainment Services (SIC 78, 79)

This category of employment includes employment associated with motion picture production and presentations, the production and performance of dramatic and musical entertainment, and miscellaneous amusement and recreational activities. In 1965, 35% of reported employment was located in the area east of Van Ness and north of Market (primarily near the hotels) and another 10% was located in the Market-Howard corridor from the Embarcadero to 11th Street. According to available data for 1970, the area north of Market and east of Van Ness had increased its share of employment in these industries to 52%. Both the increased share of employment in this part of the city and the overall increase in employment in this industry are due chiefly to increased nonresident demand.

i. Automobile Services (SIC 75)

This category includes employment associated with parking lots and garages, automobile repair shops, automobile rentals, and various automobile services, such as car washing. (Automotive dealers and service stations are classified under retail trade.)

In 1965 about 55% of employment in these services was located in the Downtown and South of Market areas, with the remaining employment scattered throughout the city. Between 1965 and 1972, employment in this service industry increased by almost 20%. Employment associated with parking lots and garages accounted for 42% of the net increase, while automobile repairs and services accounted for the other ~~68%~~^{58%}. Employment in automobile rentals was stable.

Given these changes, it is likely that the share of employment in this industry located in the Downtown and South of Market areas has increased, due to increased parking and automobile service demands generated by increased Downtown employment. Some increases have undoubtedly occurred as well in the residential parts of the city due to increased automobile ownership and demand for automobile services.

- j. Other Services: Personal Services (SIC 72), Miscellaneous Repair Services (SIC 76), Museums, Zoological and Botanical Gardens (SIC 84), and Nonprofit Membership Organizations (SIC 86)

Employment in other service industries and institutions is generally located outside the major business areas of San Francisco. Employment in personal services, which is primarily dependent on resident demand, is spread throughout the city's residential areas in accordance with population distribution.

Employment by nonprofit membership organizations is somewhat more concentrated, with about 35% of employment located in the Northeast, Downtown, and South of Market areas. This group includes labor unions, civic and business associations, and professional associations, which tend to locate in the central business areas. Miscellaneous repair services have a fairly high concentration in the South of Market area (25% in 1965), with remaining employment found throughout the city.

4. The Future Distribution of Economic Activity

A fairly generalized forecast can be made of the future location of industrial and commercial activities in the city based on past trends in the location of specific activities and projected changes in employment in specific categories. Due to the inadequacy of data on the current location of certain sectors and the unique impacts occasioned by decisions made by particular, dominant firms in an industry, it is not possible to be wholly accurate about the future distribution of employment in specific sectors. However, a fairly reliable approximation can be made of future changes in overall employment in different areas based on prevailing trends. These projections can then be used to project space and land use requirements in order to elucidate possible conflicts among land uses. Year 2000 low and high projections of employment and 1985 medium-level projections have been used to allocate employment among areas.

Under the "low growth projection," Downtown, South of Market, and the Northeast sections of the city are expected to account for about 71% of net employment growth in the city, less than the percentage of city growth estimated to have occurred between 1965 and 1970 in the same areas. (See Table IV-8 and Figure IV-3.) This lower share of net projected growth would result from a combination of relatively lower rates of growth in FIRE, business services, and nonresident oriented retail employment and high rates of decline in manufacturing and wholesaling.

A substantial share of net new growth in employment under the low growth scenario is allocated to medical services and government, which are expected, given current trends, to involve significant employment outside these areas of the city. Under the low growth projection, the overall share of the eastern third of the city in net new growth would be about 59%, down from past trends. This overall declining share for the commercial-industrial belt of the city would result from severe declines in employment now concentrated in the traditional industrial areas, as well as lower growth rates in the commercial areas.

TABLE IV-8

PROJECTED EMPLOYMENT CHANGE BY MAJOR COMMERCIAL AND INDUSTRIAL DISTRICT
1973-1985-2000

District ^a	1973-1985		Low		High	
	Number	Percent	Number	Percent	Number	Percent
Northeast	4,943	8.4%	7,300	9.3%	11,670	7.20%
Downtown	25,807	43.6	35,165	44.6	51,405	31.70
South of Market	14,230	24.1	13,560	17.2	43,980	27.10
Potrero	(982)	(1.7)	(3,100)	(3.9)	1,425	0.90
Inner Mission Industrial	(302)	(0.5)	(2,215)	(2.8)	1,650	1.00
Northern Bayshore	(946)	(1.6)	(2,965)	(3.8)	(395)	(0.02)
Southern Bayshore	(289)	(0.5)	(1,025)	(1.3)	(320)	(0.01)
Subtotal	42,461	71.8%	46,720	59.3%	109,415	67.60%
Remainder of City	16,687	28.2	32,091	40.7	52,646	32.50
Total Allocated	59,148	100.0%	78,811	100.0%	162,061	100.10%*
Unallocated ^b	7,352	-	(2,211)	-	23,939	-
Grand Total	66,500	100.0%	75,600	100.0%	186,000	100.10%*

*Error due to rounding.

Notes: a. See Figure IV-3 for the areas designated in this and subsequent tables.

b. No area allocation was projected for employment in Local and Interurban Passenger Transit (SIC 41), Water Transportation (SIC 44), government employment not in office buildings, Contract Construction (SIC 15-17), or railroad employment.



Base Map Source: San Francisco Department of City Planning.

FIGURE IV-3 MAP OF MAJOR COMMERCIAL AND INDUSTRIAL DISTRICTS

Under the high projection, Downtown, South of Market, and the Northeast district of the city would account for about two-thirds of net new employment in the city. The net share of new growth in the eastern third of the city is projected to be about 68%. This would be rather different from the trends over the past decade during which time severe declines in employment in the traditional industrial districts have offset growth in the downtown commercial areas. Under this scenario manufacturing employment is expected to be fairly stable, with wholesaling having half the rate of decline projected under the low growth scenario.

The high and low projections portray, of course, only two aggregate projections with ranges in specific sectors lumped together to produce an overall change in city employment. It is quite possible, and has in fact been the case, for certain sectors of the city's economy to grow quite rapidly while others decline equally rapidly. Since the declining "industrial" sectors of the economy are to some extent located in entirely different areas from those occupied by the growing "commercial" sectors, the low growth scenario may more accurately project what is to happen in manufacturing, TCU, and wholesale trade, while the high growth scenario may prove accurate for FIRE, services, and government. In this case, current trends would be expected to continue, with Downtown, parts of South of Market, and the Northeast district expected to account for an even greater share of net new employment than they have over the past decade, and remaining employment located chiefly in and around the Civic Center area and near the city's major hospitals. In this case the industrial areas below Folsom Street would experience substantial drops in employment.

The average-level projection for 1985 results in a higher proportion of new employment growth in the Northeast, Downtown, and South of Market districts (76%) and a resulting overall higher share in the eastern commercial and industrial districts (72%). These projections reflect a slower rate of decline in manufacturing and wholesaling employment than has been occurring over the past decade. Table IV-9 indicates the composition of employment changes between 1973 and 1985 in this projection by major commercial and industrial district. Major growth in FIRE, services, and government accounts for the increased employment in Downtown, South of Market, and Northeast. Outside the major commercial and industrial districts increases in services employment also involve significant growth. Relatively small declines in manufacturing employment in South of Market are offset by growth in transportation, communications, and utilities under the projection. However, as will be noted, a slower rate of manufacturing decline may not be consistent with the growth of other sectors under current market conditions. Continued decline in manufacturing is indicated in the southern industrial areas, but at slower rates than in the past. These projections are probably optimistic for those areas.

5. Future Demand for Industrial and Commercial Space

Future changes in employment in San Francisco and in the composition of the economic base will ultimately translate into the construction of new space to house employees and provide services, the abandonment of space no longer required for current activities or unsuitable for new uses, and

TABLE IV-9

PROJECTED EMPLOYMENT CHANGES BY INDUSTRY GROUP AND BY MAJOR INDUSTRIAL AND COMMERCIAL DISTRICT - 1973-1985

<u>Employment Sectors</u>	<u>Northeast</u>	<u>Downtown</u>	<u>South of Market</u>	<u>Potrero</u>	<u>Mission</u>	<u>Northern Bayshore</u>	<u>Southern Bayshore</u>	<u>Subtotal</u>	<u>Remainder of City</u>	<u>Total</u>
Agriculture, Forestry, Fisheries, and Mining	-	691	-	-	-	-	-	691	-	691
Manufacturing	(267)	(521)	(1,627)	(625)	(585)	(430)	(236)	(4,291)	(241)	(4,532)
Office	-	(396)	(390)	-	-	-	-	(786)	-	(786)
Plant	(267)	(125)	(1,237)	(625)	(585)	(430)	(236)	(3,505)	(241)	(3,746)
Transportation, Communications, and Utilities	-	1,794	2,434	(234)	82	(279)	-	3,797	(71)	3,726
Office	-	1,794	3,310	(15)	-	-	-	4,810	(71)	4,739
Non-office	-	-	(876)	(219)	82	(279)	-	(1,013)	-	(1,013)
Wholesale Trade	(64)	(274)	(692)	(153)	(143)	(237)	(53)	(1,616)	(223)	(1,839)
Office	(64)	(274)	(363)	(80)	(75)	(124)	-	(980)	(160)	(1,140)
Non-office	-	-	(329)	(73)	(68)	(113)	(53)	(636)	(63)	(699)
Retail Trade	117	278	345	-	-	-	-	740	546	1,286
Finance, Insurance, and Real Estate	1,872	7,942	4,917	-	-	-	-	14,731	4,179	18,910
Services	2,851	10,735	5,413	30	344	-	-	19,373	11,923	31,296
Office	2,010	9,515	4,800	13	290	-	-	16,628	10,991	27,619
Parking	50	130	105	-	-	-	-	285	55	340
Hotel	675	900	450	-	-	-	-	2,025	225	2,250
Auto	45	40	40	-	40	-	-	165	304	469
Other	71	150	18	17	14	-	-	260	303	618
Government - Office	434	5,162	3,440	-	-	-	-	9,036	574	9,610
Total Allocated	4,943	25,807	14,230	(982)	(302)	(946)	(289)	42,461	16,687	59,148
Non-allocated employment*	-	-	-	-	-	-	-	-	-	7,352
Total										66,500

*See note b. to Table IV-8.

Source: Estimates by Arthur D. Little, Inc., based on projections of employment by industry. See Technical Appendix to Chapter IV for methodology.

conversion and reuse of existing physical stock. These potential changes are of great concern to the Department of City Planning, given its responsibility to plan for the use of land in San Francisco and to regulate the physical growth and development of the city.

Examination of past land use trends indicates that changes in employment do not necessarily cause identifiable and quantifiable land use patterns in all cases. Due to this fact and to the lack of comprehensive data on current occupancy characteristics and space in use by different industries, projections of future building space and land requirements must be used very carefully. In some cases fairly reliable estimates can be made of the demand for space over the short term. However, when the projections are extended for 25 years, uncertainties regarding future economic conditions, technologies of production, industrial and commercial occupancy characteristics, and other factors make projections of demand subject to substantial error.

The projections presented should be used primarily as a guide to likely future trends based on present conditions and as a means of anticipating possible problems, conflicts, and undesirable effects of changing economic forces on the city's physical character. The projected changes in space and land requirements, both those for the city as a whole and for specific subareas, provide a relatively good indication of the likely direction and magnitude of change in requirements for general types of space. In addition, the projections of office space demand are believed quite accurate with respect to the magnitude of increases required to accommodate new employment.

In the case of industrial space requirements, however, precise estimates of changes in space requirements and demand are virtually impossible. Assumptions must be made regarding the relationship between changes in employment and space requirements which are not wholly satisfactory. They are necessitated by the paucity of information on changing relationships between space occupancy and employment characteristics in different industries and uncertainty regarding the likelihood of new activities making use of space abandoned by former users.

a. Citywide Changes in Industrial and Commercial Building Space and Land Requirements (See Tables IV-10, IV-11, and IV-12.)

Future growth in employment in San Francisco is projected to require construction of from 30-53 million gross square feet by the year 2000 and about 21 million gross sq ft by 1985 under the most likely forecast employment. These estimates include allowances for replacement of older stock which is removed. From 60-70%, or 21-32 million sq ft, of the required new space will be office and institutional space. The remainder will consist of hotel, retail, and parking space. From 17-28 million sq ft of gross new office space will be required to accommodate growth in those activities having a predominant location in the city's CBD including FIRE, legal services, miscellaneous business services, miscellaneous services, and parts of the utilities and communications industries, although not all of this space is expected to be constructed in the CBD.

TABLE IV-10

PROJECTED CITYWIDE NET CHANGES IN EMPLOYMENT, SPACE, AND
LAND REQUIREMENTS BY INDUSTRY GROUP AND TYPE OF SPACE

<u>Employment</u>	<u>Net Change</u>		
	<u>1973-1985</u>	<u>1973-2000</u>	
		<u>Low</u>	<u>High</u>
Agriculture, Forestry, Fisheries, and Mining	691	817	1,267
Manufacturing	(4,532)	(14,832)	(332)
Transportation, Communications, and Utilities	3,726	2,522	8,822
Wholesale Trade	(1,839)	(10,487)	(4,487)
Retail Trade	1,286	(1,964)	8,336
Finance, Insurance, and Real Estate	18,910	32,310	42,310
Services	31,296	52,445	68,145
Government	<u>9,610</u>	<u>18,000</u>	<u>38,000</u>
Total Allocated by Area	59,148	78,811	162,061
<u>Space and Land Requirements</u>			
Industrial Space - Square Feet (000s)	(2,676.1)	(8,763.5)	(411.3)
Acres	(33.7)	(139.0)	(5.8)
Plant Space - Square Feet (000s)	(2,735.8)	(6,920.2)	230.0
Acres	(44.6)	(92.8)	8.6
Warehse. Space - Square Feet (000s)	59.7	(1,843.3)	(641.3)
Acres	10.9	(46.2)	(14.4)
Office Space - Square Feet (000s)	11,781.4	17,440.6	26,944.5
Acres	37.2	55.6	93.9
Retail Space - Square Feet (000s)	726.0	(1,424.4)	4,691.1
Acres	12.0	(31.1)	77.9
Hotel Space - Rooms	3,150	4,200	7,000
Square Feet (000s)	2,520.0	3,360.0	5,600.0
Acres	8.4	11.1	18.6
Parking and Auto Services - Spaces	20,173	26,035	50,557
Square Feet (000s)	6,095.4	4,860.2	11,790.9
Acres	50.1	48.7	102.0
Total Net Space - Square Feet (000s)	18,446.7	15,472.9	48,615.2
Acres	74.0	(53.8)	286.3

Source: Estimates by Arthur D. Little, Inc., based on projections of employment by industry. See Technical Appendix to Chapter IV for methodology.

TABLE IV-11

PROJECTED NET CHANGES IN EMPLOYMENT, SPACE, AND LAND REQUIREMENTS
IN THE SEVEN MAJOR COMMERCIAL AND INDUSTRIAL DISTRICTS

	Net Change		
	1973-1985	1973-2000	
		Low	High
<u>Employment</u>			
Agriculture, Forestry, Fisheries, and Mining	691	815	1,265
Manufacturing	(4,291)	(14,075)	1,270
Transportation, Communications, and Utilities	3,797	2,570	8,735
Wholesale Trade	(1,616)	(9,075)	(3,810)
Retail Trade	740	(100)	4,850
Finance, Insurance, and Real Estate	14,731	25,180	33,850
Services	19,373	30,905	43,155
Government	<u>9,036</u>	<u>10,500</u>	<u>20,100</u>
Total Allocated by Area	42,461	46,720	109,415
<u>Space and Land Requirements</u>			
Industrial Space - Square Feet (000s)	(1,928.3)	(8,265.6)	246.6
Acres	(22.0)	(129.4)	3.4
Plant Space - Square Feet (000s)	(2,168.0)	(6,521.8)	830.8
Acres	(37.1)	(87.5)	16.5
Warehse. Space - Square Feet (000s)	239.7	(1,801.4)	(381.4)
Acres	15.1	(41.9)	(13.1)
Office Space - Square Feet (000s)	8,678.8	11,536.5	18,335.4
Acres	19.4	21.7	45.5
Retail Space - Square Feet (000s)	396.0	(306.0)	2,599.5
Acres	4.5	(5.4)	29.9
Hotel Space - Rooms	2,835	3,780	6,300
Square Feet (000s)	2,268.0	3,024.0	5,040.0
Acres	7.0	9.2	15.4
Parking and Auto Services - Spaces	11,411	12,875	21,106
Square Feet (000s)	4,191.8	4,834.8	8,083.3
Acres	21.0	25.4	45.3
Total Net Space - Square Feet (000s)	12,452.1	10,823.7	34,304.8
Acres	26.1	(79.6)	139.2

Source: Estimates by Arthur D. Little, Inc., based on projections of employment by industry. See Technical Appendix to Chapter IV for methodology.

TABLE IV-12

PROJECTED NET CHANGES IN EMPLOYMENT, SPACE, AND LAND REQUIREMENTS
OUTSIDE THE MAJOR COMMERCIAL AND INDUSTRIAL DISTRICTS

	Net Change		
	1973-1985	1973-2000	
		Low	High
<u>Employment</u>			
Agriculture, Forestry, Fisheries, and Mining	-	2	2
Manufacturing	(241)	(757)	(1,602)
Transportation, Communications, and Utilities	(71)	(48)	87
Wholesale Trade	(223)	(1,412)	(677)
Retail Trade	546	(1,864)	3,486
Finance, Insurance, and Real Estate	4,179	7,130	8,460
Services	11,923	21,540	24,990
Government	<u>574</u>	<u>7,500</u>	<u>17,900</u>
Total Allocated by Area	16,687	32,091	52,646
<u>Space and Land Requirements</u>			
Industrial Space - Square Feet (000s)	(747.8)	(580.6)	(657.9)
Acres	(11.7)	(9.6)	(9.2)
Plant Space - Square Feet (000s)	(567.8)	(398.4)	(600.8)
Acres	(7.5)	(5.3)	(7.9)
Warehse. Space - Square Feet (000s)	(180.0)	(182.2)	(57.1)
Acres	(4.2)	(4.3)	(1.3)
Office Space - Square Feet (000s)	3,102.6	5,904.1	8,609.1
Acres	17.8	33.9	49.4
Retail Space - Square Feet (000s)	330.0	(1,118.4)	2,091.6
Acres	7.5	(25.7)	48.0
Hotel Space - Rooms	315	420	700
Square Feet (000s)	2,520.0	336.0	560.0
Acres	1.4	1.9	3.2
Parking and Auto Services - Spaces	8,762	13,160	29,451
Square Feet (000s)	1,903.6	1,524.8	3,707.6
Acres	29.1	23.3	56.7
Total Net Space - Square Feet (000s)	4,840.4	6,065.9	14,310.4
Acres	44.1	23.8	148.1

Source: Estimates by Arthur D. Little, Inc., based on projections of employment by industry. See Technical Appendix to Chapter IV for methodology.

More important from the point of view of land use planning is the specific composition of the net increase in requirements and the location of demand for such space based on past and current trends. This can be illustrated by the fact that total projected increases in net space requirements may involve either a net reduction of up to 70 acres of city land in industrial and commercial use, chiefly south of China Basin Channel, or an increase in, or redevelopment of, as much as 300 acres by the year 2000, most of it north of China Basin Channel and in the city's residential areas. This wide range in possible land use effects results from uncertainty regarding the future of declining sectors of the economy and the extensive amounts of land they now occupy and their potential displacement by the growing sectors of the economy.

By 1985 the forecast is for a combination of redevelopment of and a net increase in land used for nonresidential purposes equivalent to almost 100 acres. At present the city has in excess of 7500 acres of land in economic activity so that projected changes represent a very small portion of the total land already committed to such uses.

b. Changes in the Demand for Manufacturing Space

Projected declines in employment in manufacturing could result in the abandonment or conversion to other use of from 600,000 to 7.8 million sq ft of building space by the year 2000, involving 18-98 acres of land (or equivalent proportions of land occupied both by manufacturing and other uses). The wide range in possible space requirements results from two factors: (1) under the low employment projection several industries currently occupying large amounts of space per employee are projected to decline severely, and it is assumed that such declines will primarily involve relocations which result in the abandonment of space currently used for those manufacturing purposes; and (2) under the high employment projections, those manufacturing industries projected to increase their employment are expected to utilize larger amounts of space per employee, and declines in industries currently utilizing large amounts of space per employee are forecast to be much lower.

The best estimate for 1985 is for a reduction of 2.7 million sq ft of space in manufacturing use on about 45 acres. This represents an annual reduction of about 200,000 sq ft. About 10% of the total projected decline in space is estimated to be office space, with the remainder consisting of plant space.

As will be discussed below in connection with specific subareas of the city, about 20% of the total projected decline in space requirements for manufacturing is expected to occur in South of Market, and about 50% is expected to occur in the Mission, Potrero, and Bayshore districts. These latter areas will account for almost all of the projected decline in requirements for actual plant space, with the Downtown, Northeast, and part of South of Market accounting for reduced demand for manufacturers' headquarters offices and auxiliary activities.

c. Changes in the Demand for Wholesalers' Space

Among all the types of building and land requirements, the requirements of wholesalers (and others engaged in warehousing) are the most difficult to estimate. Very little data are available on space requirements by different types of wholesalers, on the composition of employment by type of activity, or on space/employee relationships.

It is estimated that there are roughly 17 million sq ft of space in San Francisco used for wholesaling purposes. About 5.5 million sq ft are estimated to be office or office-type spaces, either in office buildings housing wholesalers who do not maintain a stock in trade or in portions of warehouse space used for office purposes. In San Francisco, about 70% of employment in wholesaling consists of those who engage in clerical, management, and sales activities and usually occupy office space. Only 30% are actually engaged in goods handling. The space requirements are vastly different for the two groups of employees and these differences reflect different kinds of wholesaler operations. In the primarily office-using category are manufacturers' sales representatives, agents, and brokers. These wholesalers, the majority of San Francisco's wholesale industry, are located chiefly in Downtown and South of Market offices. In the third category are the merchant wholesalers who maintain large inventories and require warehousing space. They may or may not have their offices in the same buildings.

Since from 55-69% of projected employment declines in the wholesaling sector are expected to involve office-type employees, fairly reliable estimates can be made regarding the change in office space requirements. It is expected that net demand for office space by wholesalers will decline by 500,000 to 1.5 million sq ft by the year 2000. By 1985 the net decline is expected to be about 230,000 sq ft. Declines in requirements are a result both of declining employment in the industry in San Francisco and technological changes, particularly computerized systems of inventory control and billing, which reduce clerical employment.

There is considerably more uncertainty regarding the future demand for warehousing space to satisfy wholesalers' requirements. If current space requirements per employee remained constant, declining employment would result in a projected decline in warehousing space of from 10-17%. However, the tendency in the industry has been toward a reduction in employment relative to the amount of warehousing space maintained. Over the next 25 years a 5-35% increase in space per employee would be required to maintain the demand for warehouse space constant, given projected declines in employment.

At present, San Francisco's space/employee ratio is estimated to be low compared to modern warehousing standards. This fact is due in part to the fact that warehousing space in use in San Francisco is often in multi-story buildings with inefficient layouts, requiring more personnel to handle goods storage and movement. A great deal of this space is located in the South of Market area. Even without construction of significant amounts of new space, however, some reduction in employment

requirements related to the same warehousing space is expected. On the assumption of a 15% increase in the space per employee ratio, a relatively small gain, the potential reduction in demand for warehouse space will range from 640,000 to 1.8 million sq ft of existing space by the year 2000.

There is evidence, however, of demand by wholesalers for new, modern warehousing space. The best estimate of potential demand over the next 10 years is for a minimum increase of 600,000 sq ft of gross new wholesaling space at about a 10% increase in space requirements per employee. Such space could require up to 20 acres of land at modern standards of warehouse development, with off-street loading and parking. The gross demand for warehousing space could be much higher, if older space is abandoned as expected. Whether or not this potential demand can be satisfied will depend on land availability and cost. Irrespective of the demand for new warehousing space, about 230,000 sq ft of office space now in use by wholesalers and almost 700,000 sq ft of older warehouse space are expected to be released by 1985.

Just over half of the projected decline in office demand is in the Downtown and South of Market areas, with the remainder scattered chiefly throughout the southern industrial areas. Almost half of the larger projected decline in wholesalers' warehousing space is expected to occur in South of Market, due to the large amounts of the city's total inventory in that area, increasing demand for land for other uses, and the inefficiency of multi-story warehouses.

There is an increasing tendency for large retailers and manufacturers to provide for their own storage, either in the city or outside it. However, due to the relatively small size of San Francisco's manufacturing and retail establishments, wholesalers appear to continue to be responsible for the storage of goods for retailers, manufacturers, and other businesses. Declining demand for space has occurred, despite this fact, because of declines in manufacturing and in retailing over the past decade. Therefore, projected changes in wholesaling space demand are related very closely to growth in other sectors, particularly retail trade.

d. Transportation, Communications, and Utilities

This group includes industries and parts of industries in San Francisco which have vastly different space requirements and land occupancy characteristics, ranging from electric generating plants to telephone switchboard operations to motor freight terminals. It is easiest to categorize space requirements in two groups: office-using activities and non-office activities, including freight handling and utility plants. The former involve office and office-type space typically located in the central business district in San Francisco. The latter involve land-intensive operations typically located in the low density industrial areas. Because of the presence in San Francisco of headquarters operations for two major utilities -- Pacific Telephone Company and Pacific Gas and Electric Company -- office space requirements in the communications and utilities industries have been high and growing. On the other hand, due to declines in manufacturing, wholesaling, and retailing in the city, there has been declining

employment in trucking and warehousing, freight forwarding, and other industrial transportation services. Employment in rail and water transportation are also included in this broad category of activities; however, space requirements have not been projected for these categories since employment changes cannot be related directly to requirements for building space or land.

Both office space demand and plant and warehouse demand are projected to increase over the next 25 years. The primary source of increased demand lies in the office space requirements of the major utilities, of transportation services to expanding businesses Downtown, and for plant and shop expansion required in connection with utility expansion. Trucking and Warehousing is subject to different trends.

(1) Trucking and Warehousing

Although employment in this sector is projected to decline, land and space requirements may remain stable. Nearly 80% of employment in this category is associated with trucking firms which do not store goods. Thus, there is little significant relationship between employment and space requirements, apart from needs for truck movements and truck storage. The remaining 20% of employment is involved in combined trucking-warehousing activities and public warehousing. About 30% of total employment in the industry consists of personnel engaged in office-type activities -- manager, professionals, and clerical personnel. A significant part of the projected decline in employment is expected to involve office employees. As a result office space demand is projected to decline by 27,000-78,000 sq ft by the year 2000. By 1985 it is estimated that about 52,000 sq ft of space will no longer be needed for this industry.

Projected declines in employment in actual goods movement and handling activities are not expected to reduce the demand for truck terminal operations or warehousing space. The demands of the industry for space and land are not sensitive to small or even relatively large changes in employment due to the tendency toward increasing mechanization of operations in warehousing and the land requirements involved in moving, loading, and storing vehicles, as opposed to housing employees. Today in modern warehousing facilities, one employee may be able to handle 10,000-20,000 sq ft of warehousing space with the aid of a forklift truck, whereas formerly there may have been many more employees to handle goods in the same space. As a result it is not expected that the demand for space or land will increase, although it is expected that employment density in the industry in San Francisco will decline in accordance with the experience of other areas.

It is not possible, without detailed study, to predict potential demand for motor freight terminal operations and public warehousing. Based on land use and employment data, it is estimated that current motor freight operations involve an average employment density of about 45 persons per acre in San Francisco, chiefly in the China Basin-Central Basin-Islands Creek areas. Modern density standards in suburban areas average 10 employees per acre, suggesting that there could be a substantial increase in acreage

devoted to trucking operations even with a significant decline in employment. Construction of new general warehousing space in single-story structures could also increase the amount of land devoted to this use even with declining employment. At present a significant amount of warehousing space is actually provided by the port on piers and port land and therefore contributes to the satisfaction of demand and reduction in the requirements for new warehouse construction. Continuation of this situation will depend on whether or not port facilities are converted to other uses or whether shipping activity increases to such an extent that the piers can no longer be used for storage.

Thus, actual requirements will depend on many factors, not the least of which is the availability and cost of land for expanded operations at lower structural densities. At present land is generally too expensive in San Francisco, compared to suburban locations, for the construction of general warehousing space, although warehousemen have shown interest in land at the India Basin Redevelopment Project which is available at lower cost than is typical of the area. Future trucking and warehousing would in any event not involve employment exceeding 30 persons per acre.

Most of the projected decline in office occupancy in this industry would occur in South of Market, where most of the office space is currently located. About half of the non-office space is also located in South of Market but is not expected to be abandoned unless relocations are forced by the expansion of the office-using industries.

(2) Utility Plants and Shops

Apart from a significant projected increase in the office space requirements of the major utilities, some expansion in plant, shop, and storage space is also expected. Over 25 years the demand is expected to range from 325,000-740,000 sq ft on 4-15 acres of land at preferred floor area ratios. Most of this development is expected to occur in the Mission and Islais Creek areas, where current facilities are located.

e. Office Space Demand: Finance, Insurance, and Real Estate; Government; and Selected Services

The most significant demand for new space will continue to come from the growing sectors of the economy: finance, insurance, and real estate; business services; miscellaneous and institutional services; government; and, as previously mentioned, utilities and communications.

Total net new demand for office and office-type space is expected to range from 17-27 million sq ft by the year 2000, with a net demand for an additional 11.8 million sq ft forecast for 1985, or an average of one million sq ft per year. Included in these estimates is projected demand for new space to accommodate growth in employment in Medical and Other Health Services (SIC 80) and Educational Services (SIC 82). Although medical and educational institutions utilize types of space somewhat different from the other service industries, a high proportion of the need in

these institutions is for office-type space. In the absence of reliable space-per-employee ratios for such institutional employers, projections have been made on the basis of ratios used for FIRE, business, and professional services employment. Space requirements could be much higher.* Only about 65% of increased government employment will involve office personnel and only this proportion is included in the estimates of office demand. Other government employment will involve performance of services which are not directly tied to space requirements (e.g., bus drivers, sewage treatment plant operators, street cleaners, etc.).

Gross office space construction is expected to be higher than net requirements due to the fact that those locations desired for new office development are already developed and much existing office space no longer required for current users will be redeveloped rather than converted for the use of other sectors. Actual office construction will probably range from 20-30 million sq ft by the year 2000 and about 15 million sq ft by 1985 (computed from 1973), or an average of 1.25 million sq ft per year.

Roughly 75% of projected office demand -- from 13-19 million sq ft by the year 2000 and 8.6 million sq ft by 1985 -- is expected to be located in medium- to high-rise buildings in the Northeast, Downtown, and South of Market districts and immediately adjacent areas west of Van Ness Avenue and southwest of Market and 11th streets.** The remaining 25% of projected office and office-type space demand -- from 5-7 million sq ft by the year 2000 and an estimated 3.5 million sq ft by 1985 -- is expected to be constructed in the residential and neighborhood commercial areas of the city at densities much lower than those Downtown. Land requirements, if construction occurs in accordance with maximum floor area ratios permitted under current zoning regulations, are expected to range from 56-94 acres by the year 2000 and be about 37 acres by 1985. This will almost all be redeveloped land rather than land converted from other uses, except in the South of Market, Northern Waterfront, and possibly the residential areas. As explained below, most of the projected demand allocated to the residential neighborhoods of the city is derived from medical and educational institutions' demand.

f. Retail Space Requirements

Retail space requirements vary almost entirely with resident population although local employment (increased through the importation of workers from the suburban areas) and tourism each have some impact on retail demand.

*Space/employee ratios vary enormously with the particular institution but the estimates are almost certainly conservative. For example, average space use per employee in institutions of higher education (not including post-secondary education) appears to be about 700 sq ft per employee.

Space per employee in hospitals probably exceeds 400 sq ft on the average.

**Census Tract boundaries for South of Market used in this study have a westerly terminus at 11th Street although it is clear that office construction may be expected west of this area. For consistency the projections for South of Market do not include the western areas, just as the Downtown projections do not include the area west of Van Ness Avenue to the north of Market Street.

Demand for retail space is projected to range from a net decline of 1.4 million sq ft to a net increase of 4.7 million sq ft by the year 2000, in accordance with different assumptions regarding population expansion and, to a lesser extent, commuter employment and tourism. The best estimate for 1985 calls for a net increase of 726,000 sq ft of retail space, of which about 55% would be added in the major commercial areas of the city -- Northern Waterfront, Downtown, and South of Market. It is estimated that there are presently about 20 million sq ft of retail space in the city; the projected increase for 1985 would represent a relatively small increment. At average floor area ratios of two in the employment centers and one in the residential areas, about 12 additional acres, or 525,000 sq ft, of ground floor space would be required.

g. Hotels and Motels

From 4200-7000 new hotel and motel rooms are projected to be required by the year 2000, 90% of which will be east of Van Ness and north of Mission Street. These rooms will involve construction of from 3.4-5.6 million sq ft of space and will occupy from 11-19 acres of land.

The best estimate of demand for 1985 (from 1973) is for an additional 3150 rooms involving 2.5 million sq ft of building on at least eight acres of land.

h. Automobile Services and Parking

"Potential" demand for parking is estimated to range from 26,000-50,000 new spaces citywide to the year 2000, with a projected "potential" demand for 20,000 additional spaces by 1985. This demand is expressed as a "potential," based on assumptions regarding automobile use by new employees and requirements for parking imposed by zoning with respect to new retail and hotel development.* Almost all of the projected new requirements result

*The following assumptions were used in estimating parking demand:

Percentage of new employees using automobiles to get to work:

Northwest - 50% to 1985, 40% to the year 2000

Downtown - 30% to 1985 and for 2000 low projection, 25% for 2000 high

South of Market - 40% to 1985, 30% for 2000 low, 25% for 2000 high

Outside of areas specified above - 70%

Automobile occupancy for employees going to work by car:

Northeast, Downtown, and South of Market - 1.5 persons per automobile
for 1985 projection, 1.6 persons per automobile for 2000 projection

Outside of areas specified above - 1.5 persons per automobile

Parking for retail customers:

Downtown and South of Market - no new spaces required

Northeast and outside the Downtown, South of Market, and Northeast -
1 space for every 500 sq ft of new retail space

Hotel patrons and guests:

Downtown and South of Market - no new spaces required

Northeast and outside the Northeast, Downtown, and South of Market -
1 space for every 8 rooms

Average Gross Square Feet per Space - 350

from increased employment; between 40% and 50% of the increased requirements are expected to be outside the Downtown and South of Market areas. (These projections assume no new parking to accommodate retail or hotel demand in Downtown or South of Market.) It is, of course, possible that this "potential demand" will not be satisfied due to public policy and that transit patronage will account for an even larger proportion of employee travel than has been assumed, both within and outside the major employment centers. However, the projections provide a good approximation of the potential demand which the private sector would act to satisfy, in the absence of public constraints.

When combined with estimated new demand for automobile services, city-wide requirements amount to from 5-12 million sq ft of new parking, garage, and shop space on from 49-102 acres of land by the year 2000, not inconsistent with land use trends over the past 25 years. By 1985 alone, an additional 6.1 million sq ft of space on 50 acres of land could be required. According to the 1970 land use survey by the Department of City Planning, more than 400 acres of land in the city are already devoted to these uses, an increase of from 30-50 acres since 1961. Thus, it appears that the projected requirements, while staggering, are not inconceivable. Projected land requirements to accommodate parking in the Downtown and South of Market districts are based on the assumption that commercial or private garages are built to a floor area ratio of 6 on the average. To the extent that parking lots, rather than multi-story garages, are developed to fulfill a part of this demand, the total land required will be much greater. In the Northeast district, parking demand is assumed to be accommodated in garages with an average floor area ratio of 4; outside these districts, a floor area ratio of 2 is assumed.

The implications of parking demand for land use in the Downtown and South of Market areas are discussed at greater length in the subarea analysis below.

B. AREA ANALYSIS OF MAJOR COMMERCIAL AND INDUSTRIAL DISTRICTS

Of far more importance for planning purposes than citywide projections of space and land requirements for economic activity is the expected demand for subareas of the city. Space and land requirements have been estimated for the major commercial and industrial districts and for the "rest of the city" on the basis of estimated employment changes in each area. Since activities allocated to specific areas will require different amounts of space per employee and will occupy land at different floor area ratios on the basis of land values, practice, and zoning requirements, each area and each activity must be treated separately.

Projected requirements have been derived from employment projections at the two-digit, and sometimes even the three-digit, SIC code level. In some cases even greater refinement is required due to the fact that specific activities within a category of employment may involve different employees in different operations which affect space requirements. Projections of occupational characteristics of future employees have also been used in

projecting space requirements. In the case of projected declines in employment in specific sectors, available information on current occupancy standards within each industrial area has been used in translating employment projections into land use impacts.

The eastern third of the city has traditionally been the location of the city's major industrial employment, as well as the center for commercial activity. This large area can be divided into several sub-areas having different functional characteristics and housing different kinds of industry. The following subareas were identified for analytical purposes based on economic function and the form of available data (see Figure IV-3):

1. Northeast - including Fisherman's Wharf, most of the Northern Waterfront, Jackson Square, North Beach, and Russian Hill.
2. Downtown (North of Market) - including the financial district, retail district, Chinatown, and Civic Center.
3. South of Market - from Market to China Basin Channel, from the Bay to 11th Street.
4. Inner Mission Industrial District - the area north of Army and east of South Van Ness to the James Lick Freeway.
5. Potrero District - including China Basin, Central Basin, and the Potrero industrial district.
6. Northern Bayshore Industrial District - including the Army Street and Islais Creek area, Apparel City, the Produce Market, and India Basin.
7. Southern Bayshore Industrial District - including South Basin, Candlestick Cove, Little Hollywood, and the Hunter's Point Naval Shipyard.

1. Northeast District

This district is a diverse area of high density residences, intense commercial activity, small-scale manufacturing, and various service jobs. It is composed of at least three distinct areas useful for economic analysis: the northern Van Ness-Polk Gulch area extending to Marina Green, the Northern Waterfront area extending around Telegraph Hill to the Golden Gateway area, and the Russian Hill-North Beach area in between (including northern Chinatown). (See Figure IV-4.) Tourist-oriented retailing and port activity are extensive along the Northern Waterfront, along with some manufacturing and wholesaling.

a. Employment Trends

Employment in the entire district is estimated to have increased by 20% for a gain of about 4000 jobs between 1965-70, slightly increasing the area's share of citywide employment (Table IV-13). Total 1970 employment is estimated at 25,000 jobs. The major sources of growth were in FIRE, retail trade, and professional services. Despite a decline, manufacturing still represented 17% of employment in 1970; retail trade accounted for the largest share with 24%. There was a slight decline in transportation employment and a significant increase in retail trade employment.

(1) Northern Waterfront

Total estimated employment in 1970 was about 11,300. This part of the district accounted for the majority of growth in FIRE and professional services. Net employment is estimated to have increased by only 200 jobs, but the increase in jobs in FIRE, business services, and professional services is estimated at 2300 jobs. Declines occurred in manufacturing, TCU, and, according to available data, retail trade employment. Almost half of total employment in the area is now in office-using activities and retail trade, but manufacturing and TCU still account for about 35% of the total employment in the area. Employment in wholesale trade, contrary to trends observed in the rest of the city, appears to have increased, possibly as the result of increases in employment associated with sales representatives and brokers, rather than merchant wholesalers. (See Table IV-14.)

(2) Russian Hill-North Beach

This part of the district is estimated to have provided 7500 jobs in 1970, up 2200 jobs from 1965. Gains apparently occurred in all sectors, except business and repair services, with manufacturing and FIRE accounting for more than half of total growth. Manufacturing employment increases in this area are due to growth in employment by apparel contractors in and around Chinatown. Growth in employment in FIRE and services indicates the tendency for the area to be a receptor area for overflow demand from Downtown. Retail trade is the largest employer in this area, although it accounts for a declining share of total employment, estimated at 30% in 1970 (Table IV-14).

(3) Van Ness-Polk Corridor

This western portion of the district is estimated to have accounted for 6100 jobs in 1970, up 1600 from 1965. Three-fourths of the gain in employment was in retail trade, a reflection of the development of Ghirardelli Square and neighboring retail shops at the northernmost end of the area during this period. Lesser increases were also reported in professional services employment, manufacturing, and TCU. Employment in professional and business services also increased (Table IV-14).

TABLE IV-13

EMPLOYMENT TRENDS - TOTAL NORTHEAST DISTRICT

<u>Industry Group</u>	<u>1965</u>		<u>1970</u>		<u>Change</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
Agriculture, Forestry, Fisheries, and Mining	67	0.3%	128	0.5%	61
Contract Construction	1,219	5.8	956	3.8	(263)
Manufacturing	5,251	25.1	4,327	17.4	(924)
Transportation, Communica- tions, and Utilities	2,592	12.4	2,526	10.1	(66)
Wholesale Trade	1,453	7.0	1,776	7.1	323
Retail Trade	4,894	23.4	5,963	23.9	1,069
Finance, Insurance, and Real Estate	589	2.8	2,212	8.9	1,623
Business Services	972	4.7	1,424	5.7	452
Personal Services	938	4.5	1,154	4.6	216
Entertainment	156	0.7	251	1.0	95
Professional Services	2,167	10.4	3,712	14.9	1,545
Public Administration, Government, and Other	604	2.9	505	2.0	(99)
Total	20,902	100.0%	24,934	99.9%*	4,032

*Error due to rounding.

Sources: Data on employment by area and by type for 1965 were obtained from reports and printouts of the Bay Area Transportation Study Commission (predecessor to the Metropolitan Transportation Commission) derived from data furnished by the California Department of Economic Development. Data on employment by area and type for 1970 were derived by Arthur D. Little, Inc., from information contained in the U.S. Census of Population and Housing and contained in special computer runs furnished by the Metropolitan Transportation Commission.

TABLE IV-14

EMPLOYMENT TRENDS - NORTHEAST DISTRICT

Industry Group	Russian Hill-North Beach			Van Ness-Polk Corridor			Northern Waterfront		
	1965			1965			1965		
	Number	Percent	Change	Number	Percent	Change	Number	Percent	Change
Agriculture, Forestry, Fisheries, and Mining	1	0.02%	28	8	0.2%	25	58	0.5%	75
Contract Construction	87	1.6	224	1,041	23.0	197	91	0.8	535
Manufacturing	1,055	19.9	1,744	371	8.2	643	3,825	34.5	1,940
Transportation, Communications, and Utilities	0	0.0	226	137	3.0	385	2,455	22.1	1,915
Wholesale Trade	97	1.8	219	397	8.8	267	959	8.7	1,290
Retail Trade	2,155	40.7	2,257	640	14.1	1,846	2,099	18.9	1,860
Finance, Insurance, and Real Estate	246	4.7	784	301	6.6	328	42	0.4	1,100
Business Services	634	12.0	498	208	4.6	356	130	1.2	570
Personal Services	316	6.0	468	411	9.1	426	211	1.9	260
Entertainment	100	1.9	111	22	0.5	75	34	0.3	65
Professional Services	520	9.8	672	921	20.3	1,490	726	6.5	1,550
Public Administration, Government, and Other	78	1.5	259	72	1.6	116	454	4.1	130
Total	5,289	99.9%*	7,490	4,529	100.0%	6,154	11,084	99.9%*	11,290
									206

*Error due to rounding.

Sources: Data on employment by area and by type for 1965 were obtained from reports and printouts of the Bay Area Transportation Study Commission (predecessor to the Metropolitan Transportation Commission) derived from data furnished by the California Department of Economic Development. Data on employment by area and type for 1970 were derived by Arthur D. Little, Inc., from information contained in the U.S. Census of Population and Housing and contained in special computer runs furnished by the Metropolitan Transportation Commission.

b. Land Use Trends

Land use was relatively stable in this district between 1961 and 1970, although land in industrial use declined by 19 acres while land in utility uses declined by another 17 acres. (See Table IV-15.) These changes were accounted for by land conversions chiefly in the Northern Waterfront area. Land in public use increased throughout the district. More than 40% of land in the entire district is in residential use and only 10% is in industrial use, reflecting both the lack of major manufacturing activity and the high density character of what manufacturing there is. Commercial land use accounts for more than 20% of total land in the area and has increased by 16 acres between 1961 and 1970, chiefly in the Northern Waterfront area.

(1) Northern Waterfront

Total land in industrial use declined by more than 17 acres between 1961 and 1970 while land in utility uses declined by another 12 acres. Consistent with these changes was an increase in commercial use of 13 acres, almost all of the increase in this use in the entire Northeast district. Slightly more than half of all land in commercial use in this area was in parking, service station, and other automobile-related uses in 1970, indicating the high demand for parking in connection with tourist-related retail trade and interim use of land for parking during private redevelopment of land for retail and office uses. Construction of multi-level parking garages is becoming more common as parking lots are converted to office uses. An increase in parking and automobile uses appears to have accounted for a substantial portion of the gain in commercial land use between 1961 and 1970. About 10 acres of vacant land or 4% of total acreage were available in 1970.

(2) Russian Hill-North Beach

Land use was more stable in this area, with very minor fluctuations occurring in the amount of land in commercial and industrial use. A reported net decline in commercial use and a net increase in industrial use may have resulted chiefly from reclassification of wholesalers' warehouses from commercial to light industrial. There is very little land in industrial use in this area and little vacant land (less than 2%).

(3) Van Ness-Polk Corridor

The decline in industrial use of more than three acres and the increase in commercial use of more than four acres resulted primarily from the Ghirardelli Square project and adjacent retail developments. Vacant land declined over the period and stood at about 2% of total land in the area in 1970.

TABLE IV-15

LAND USE TRENDS - NORTHEAST DISTRICT

	Total Gross Acreage	Total Net Acreage	Acreage by Use							
			Residence	Commerce	Industry	Utility	Institution	Private Recreation	Public	Vacant
Russian Hill-North Beach										
1970	214.03	136.38	86.35	27.56	7.92	-	1.17	0.47	9.22	3.57
1961-64	213.45	135.86	86.35	29.06	5.90	-	3.65	-	6.90	4.00
Change	0.58	0.42	0.00	(1.50)	2.02	-	(2.48)	0.47	2.32	(0.43)
Van Ness-Polk Corridor										
1970	268.68	184.36	98.81	24.15	10.26	0.07	2.03	0.26	43.55	5.24
1961-64	267.74	183.23	97.63	19.64	13.63	4.66	2.38	1.45	36.53	7.31
Change	0.94	1.13	1.18	4.51	(3.37)	(4.59)	(0.35)	(1.19)	7.02	(2.07)
Northern Waterfront										
1970	283.52	176.73	56.04	41.19	31.02	6.24	3.26	0.43	28.25	10.28
1961-64	307.78	177.43	49.11	27.72	48.57	18.63	3.87	0.39	20.46	8.68
Change	(24.26)	(0.70)	6.93	13.47	(17.55)	(12.39)	(0.61)	0.04	7.79	1.60
Total Northeast District										
1970	766.23	497.37	241.20	92.90	49.20	6.31	6.46	1.16	81.02	19.09
1961-64	788.97	496.52	233.09	76.42	68.10	23.29	9.90	1.84	63.89	19.99
Change	(22.74)	0.85	8.11	16.48	(18.90)	(16.98)	(3.44)	(0.68)	17.13	(0.90)

Sources: City of San Francisco, Department of City Planning, The Use of Land in San Francisco, October 1964; and San Francisco Land Use Tabulations for 1970, June 1973.

c. Employment, Space Demand, and Land Use Projections

The Northeast district as a whole is projected to experience a net increase in employment of 7300 to 11,700 jobs by 2000, from 9.3% to 7.2% of net new employment, the same or a little higher than the estimated share between 1965 and 1970. (See Table IV-16.) Under the low projection the net increase would be a composite of projected declines in employment in manufacturing and projected increases in finance, business, professional services, hotels, and retailing.* Under the high growth projection, an increase in apparel manufacturing and stability in other manufacturing help produce the higher figures. However, there is some doubt that manufacturing in the area could survive the increase in office, retail, and hotel construction under the high projection.

This district is expected to experience a decline in space and land used for industrial activities and an increase in office, retail, and parking uses in the future. Net office requirements are expected to increase from 1.3 million to 1.8 million square feet by the year 2000 on from 6-8 acres of land. The probable demand by 1985 will require an additional 900,000 sq ft on 4 acres.

Demand for retail space is expected to increase by 260,000 to 420,000 sq ft on from 3-5 acres of land by the year 2000. Parking requirements are expected to increase by 2900 to 4700 spaces, and with auto services will involve 8-12 acres of land in multi-story garages. The forecast for 1985 calls for a net addition of about 120,000 sq ft of retail space and about 4 acres of parking containing 1900 spaces in four-story garages.

Hotel rooms are projected to increase by 900-1000 by 1985 (from 1973) and from 1200-2100 by 2000.

Declines in manufacturing and wholesaling uses are expected to reduce occupied space in these uses by 55,000 to 370,000 sq ft on 1-4 acres of land. By 1985 at least 110,000 sq ft on 1.2 acres will probably have been removed from these uses. The number may be greater if office and retail demand grows more quickly.

d. Land Use Issues

Total identified vacant land as of the 1970 land use survey totaled 19 acres in this part of the city, of which 10 acres were located along the Northern Waterfront. Total acreage requirements to meet projected growth range from 18-32 acres, involving new office, retail, and parking uses, chiefly in the Northern Waterfront.

Accommodation of the increased office and retail uses, including supporting parking facilities estimated to be required, even apart from residential uses, is expected to cause the redevelopment of land now used for manufacturing and wholesaling purposes. Therefore, it is unlikely,

*Allocation of construction jobs is not included in these projections.

TABLE IV-16

PROJECTED NET CHANGES IN EMPLOYMENT, SPACE, AND LAND REQUIREMENTS
NORTHEAST DISTRICT

	Net Change		
	1973-1985	1973-2000	
		Low	High
<u>Employment</u>			
Agriculture, Forestry, Fisheries, and Mining	-	-	-
Manufacturing	(267)	(875)	325
Transportation, Communications, and Utilities	-	-	-
Wholesale Trade	(64)	(390)	(140)
Retail Trade	117	480	760
Finance, Insurance, and Real Estate	1,872	3,210	4,230
Services	2,851	4,375	5,895
Government	434	500	600
Total Allocated by Area	4,943	7,300	11,670
<u>Space and Land Requirements</u>			
Industrial Space - Square Feet (000s)	(112.7)	(369.5)	(55.0)
Acres	(1.2)	(3.9)	(0.7)
Plant Space - Square Feet (000s)	(112.7)	(369.5)	(55.0)
Acres	(1.2)	(3.9)	(0.7)
Warehse. Space - Square Feet (000s)	-	-	-
Acres	-	-	-
Office Space - Square Feet (000s)	841.0	1,330.0	1,781.0
Acres	3.8	6.1	8.2
Retail Space - Square Feet (000s)	63.4	260.0	420.0
Acres	0.7	3.0	4.8
Hotel Space - Rooms	945	1,260	2,100
Square Feet (000s)	756.0	1,008.0	1,680.0
Acres	3.5	4.6	7.7
Parking and Auto Services - Spaces	1,913	2,926	4,712
Square Feet (000s)	723.5	1,108.1	1,769.3
Acres	5.0	7.8	12.3
Total Net Space - Square Feet	2,271.2	3,336.6	5,595.3
Acres	11.8	17.6	32.3

Source: Estimates by Arthur D. Little, Inc., based on projections of employment by industry. See Technical Appendix to Chapter IV for methodology.

under the high growth projection at least, that stability in existing manufacturing and warehousing use could be maintained simultaneously with accommodation of office growth. In particular the food, paper, metals, and machinery activities are likely to be forced out, although for those firms located on port land, whether this occurs will depend entirely on the future use of port land and piers.

The difference between the high and low projections involves three acres' difference in manufacturing uses. However, the only manufacturing activity projected to expand under the high growth projection -- the apparel industry -- is not located along the Northern Waterfront and is not likely to be affected by these trends unless office development or use (of old buildings) is permitted to expand into the Chinatown and North Beach areas. The most likely forecast for 1985 is for a decline in most remaining manufacturing activities in any event, particularly the food industry. Forced relocation through office development will probably hasten this decline but it is not likely to be a primary cause of it.

2. Downtown (North of Market)

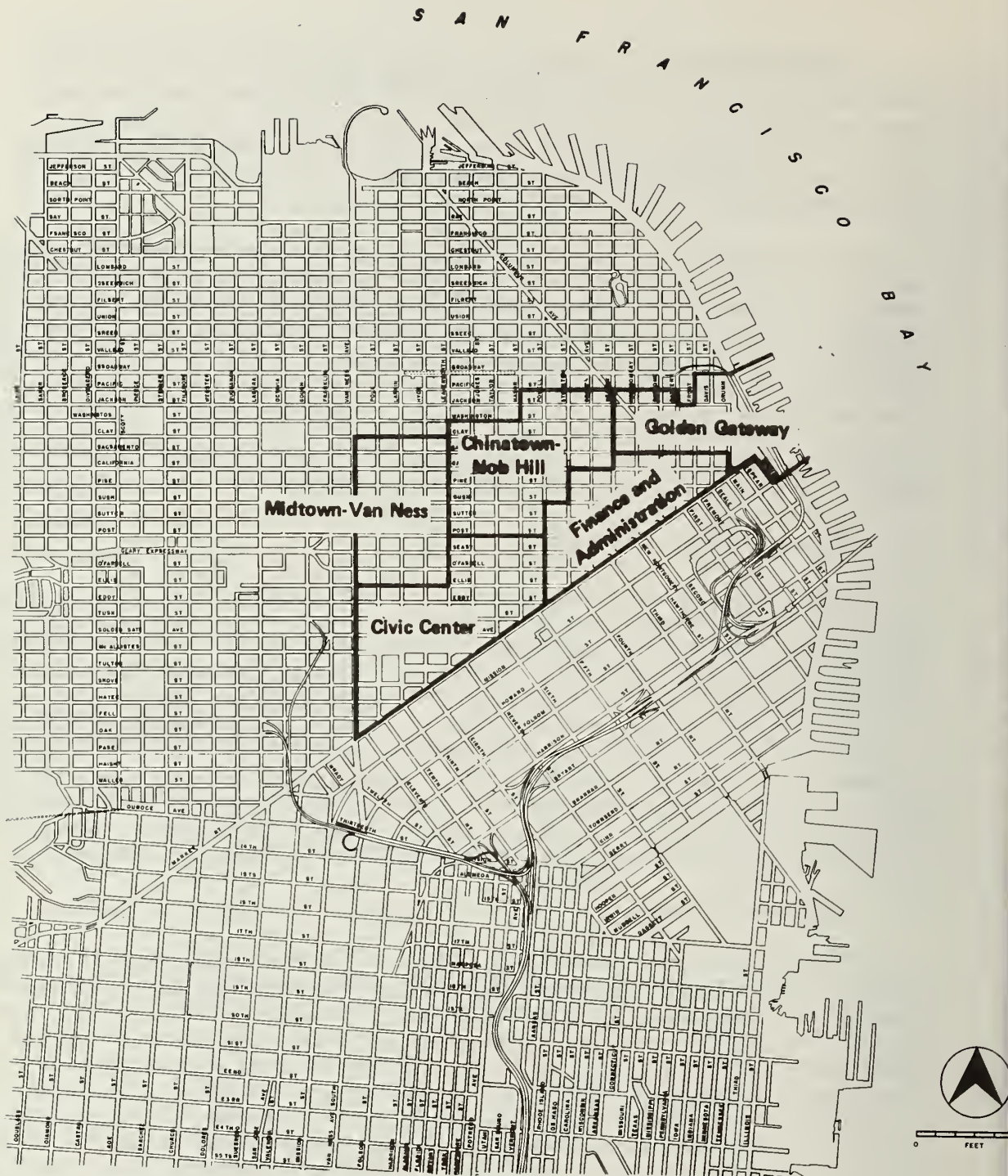
This area includes the financial and administrative district, with the highest employment density in the city, the retail district around Union Square, the hotel and entertainment district, Civic Center, Midtown, and adjacent areas north into Chinatown. It also includes the Golden Gateway project area, including the Embarcadero office center. For statistical purposes, it has been possible to isolate five subareas within this large area; the financial, administrative, and retail district; the Golden Gateway area; the Civic Center area, including part of the adjacent hotel-entertainment district to the east; Midtown-Van Ness; and the Chinatown-Nob Hill area, generally north of Union Square from Kearny to Jones Street. (See Figure IV-5.) Total employment in 1970 was from 186,000-188,000.

a. Employment Trends

Overall the Downtown area is estimated to have increased in employment by almost 38,000 jobs or 26% between 1965 and 1970 (not including construction employment which declined). (See Table IV-17.) This represented 55% of the total net increase in employment in the city during the same period and 64% of all permanent employment (not including construction employment assigned to the area). Declines are recorded in wholesale and personal services employment; the major gains occurred, as expected, in FIRE, TCU, and professional services. According to the data, there was also an increase in retail employment during this period. Even manufacturing employment had reported increases, although this was chiefly in headquarters activity, with some increases in apparel industry employment.

(1) Financial, Administrative, and Retail District

This portion of Downtown accounted for an estimated 41% of employment growth in the Downtown district due to large increases in FIRE, TCU, and professional services. Gains also occurred in business services. A third



Base Map Source: San Francisco Department of City Planning.

FIGURE IV-5 MAP OF DOWNTOWN SUBAREAS

TABLE IV-17

EMPLOYMENT TRENDS - TOTAL DOWNTOWN

<u>Industry Group</u>	<u>1965</u>		<u>1970</u>		<u>Change</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
Agriculture, Forestry, Fisheries, and Mining	591	0.4%	2,131	1.1%	1,540
Contract Construction	9,104	5.9	4,038	2.2	(5,066)
Manufacturing	10,949	7.1	12,237	6.6	1,288
Transportation, Communica- tions, and Utilities	9,192	6.0	20,077	10.8	10,885
Wholesale Trade	11,652	7.6	7,726	4.1	(3,926)
Retail Trade	22,925	14.9	26,081	14.0	3,156
Finance, Insurance, and Real Estate	39,434	25.7	53,445	28.7	14,011
Business Services	7,850	5.1	10,822	5.8	2,972
Personal Services	11,309	7.4	9,318	5.0	(1,991)
Entertainment	1,667	1.1	2,136	1.1	469
Professional Services	15,633	10.2	25,511	13.7	9,878
Public Administration, Government, and Other	13,315	8.7	12,945	6.9	(370)
Total	153,621	100.1%*	186,467	100.0%	32,846

*Error in rounding.

Sources: Data on employment by area and by type for 1965 were obtained from reports and printouts of the Bay Area Transportation Study Commission (predecessor to the Metropolitan Transportation Commission) derived from data furnished by the California Department of Economic Development. Data on employment by area and type for 1970 were derived by Arthur D. Little, Inc., from information contained in the U.S. Census of Population and Housing and contained in special computer runs furnished by the Metropolitan Transportation Commission.

of employment in wholesale trade was lost, and there was a 15% decline in personal services employment. Employment in construction was reported as down between the years 1965 and 1970. Small increases in retail and manufacturing employment are also indicated. This area includes most of the city's major retail district around Union Square; since reported increases in other employment would not justify the entire increase in retail employment, tourist, resident, and nonresident shopper demand must have increased in this area. This section accounts for 57% of total Downtown employment, 73% of Downtown FIRE employment, and more than half of Downtown employment in professional services (Table IV-18).

(2) Golden Gateway Area and West

Employment increased by more than 7600 jobs in this area between 1965 and 1970, an increase of 66% and 23% of the total net gain in Downtown. When construction employment assigned to the area is excluded, the total gain in employment was 9450 jobs or 96%. These gains were derived from increases in employment in FIRE and TCU primarily, with reported increases in business services, professional services, and retail trade. The area includes the location of substantial new construction which has occurred since 1970, including the Transamerica building and Embarcadero Center. Some of the gain in TCU may be related to port-related employment in and around the Ferry Building. Employment in manufacturing and wholesaling declined as did reported employment in government and public administration. The area only accounts for 10% of Downtown employment (as of 1970) but is growing more rapidly than any other section (Table IV-18).

(3) Chinatown-Nob Hill

This area accounts for another 10% of Downtown employment north of Market Street and had a net increase of about 56% or 7400 jobs between 1965 and 1970. Gains were reported in all categories except contract construction. FIRE, professional services, and retail trade showed the largest gains, in both percentage and absolute terms. This area is highly diverse, with no dominant sector of employment. Professional services have continued to increase, apparently maintaining the area as a major center for medical and other professional offices. Manufacturing showed a significant percentage increase which is chiefly attributable to gains in employment by apparel contractors in Chinatown and other small manufacturing activity located in Chinatown (including pharmaceuticals). Personal services employment remained stable and business services employment showed only a small increase (Table IV-18).

(4) Midtown-Van Ness

This area contains only 4% of total Downtown district employment and registered a gain of 18% or 1300 jobs between 1965 and 1970. Employment declined in wholesale trade and personal services. Increases occurred in FIRE, business services, professional services, and government. This area is north of the Civic Center and is the location of part of "automobile row." Auto dealers may have accounted for some of the increased employment reported in retail trade. Manufacturing employment remained stable (Table IV-18).

TABLE IV-18

EMPLOYMENT TRENDS - DOWNTOWN

Industry Group	Financial, Administrative, and Retail District				Civic Center				Midtown-Van Ness						
	1965		1970		1965		1970		1965		1970				
	Number	Percent	Number	Percent	Change	Number	Percent	Change	Number	Percent	Number	Percent	Change		
Agriculture, Forestry, Fisheries, and Mining	554	0.6%	1,232	1.2%	678	4	0.01%	85	0.3%	81	0	-	12	0.1%	12
Contract Construction	3,982	4.3	2,208	2.1	(1,774)	2,397	8.4	936	3.0	(1,461)	0	-	140	1.7	140
Manufacturing	7,825	8.4	8,145	7.6	320	97	0.3	683	2.2	586	172	2.5%	180	2.2	8
Transportation, Communica- tions, and Utilities	6,763	7.2	12,302	11.5	5,539	1,101	3.9	1,875	5.9	774	425	6.1	639	7.7	214
Wholesale Trade	9,045	9.7	5,348	5.0	(3,697)	560	2.0	468	1.5	(92)	615	8.8	333	4.0	(282)
Retail Trade	13,581	14.5	14,060	13.1	479	4,018	14.1	4,265	13.5	247	1,716	24.6	2,401	29.1	685
Finance, Insurance, and Real Estate	33,255	35.5	39,061	36.4	5,806	2,093	7.3	3,876	12.3	1,783	561	8.1	945	11.4	384
Business Services	5,372	5.7	6,644	6.2	1,272	1,092	3.8	1,416	4.5	324	297	4.3	510	6.2	213
Personal Services	2,387	2.5	2,047	1.9	(340)	4,522	15.8	3,525	11.2	(997)	1,513	21.7	764	9.3	(749)
Entertainment	86	0.1	311	0.3	225	1,053	3.7	1,126	3.6	73	129	1.9	218	2.6	89
Professional Services	9,456	10.1	14,414	13.5	4,958	2,102	7.4	3,806	12.0	1,704	1,517	21.8	1,939	23.5	422
Public Administration, Government, and Other	1,368	1.5	1,415	1.3	47	9,532	33.4	9,551	30.2	19	23	0.3	182	2.2	159
Total	93,674	100.1%*	107,187	100.1%*	13,513	28,571	100.1%*	31,612	100.2%*	3,041	6,968	100.1%*	8,263	100.0%	1,295

TABLE IV-18 (Continued)

Industry Group	Chinatown-Nob Hill			Golden Gateway		
	1965		Change	1965		Change
	Number	Percent		Number	Percent	
Agriculture, Forestry, Fisheries, and Mining	0	-	118 0.6% 118	33	0.3%	684 3.6% 651
Contract Construction	713	5.5%	225 1.1 (488)	2,012	17.6	529 2.8 (1,483)
Manufacturing	1,342	10.4	1,905 9.4 563	1,513	13.2	1,324 6.9 (189)
Transportation, Communications, and Utilities	520	4.0	1,078 5.3 558	383	3.3	4,183 21.9 3,800
Wholesale Trade	236	1.8	662 3.3 426	1,196	10.4	915 4.8 (281)
Retail Trade	2,753	21.3	3,835 18.9 1,082	857	7.5	1,520 8.0 663
Finance, Insurance, and Real Estate	1,879	14.5	4,396 21.7 2,517	1,646	14.4	5,167 27.1 3,521
Business Services	275	2.1	644 3.2 369	814	7.1	1,608 8.4 794
Personal Services	2,811	21.7	2,812 13.9 1	76	0.7	170 0.9 94
Entertainment	291	2.2	410 2.0 119	108	0.9	71 0.4 (37)
Professional Services	1,965	15.2	3,967 19.5 2,002	593	5.2	1,385 7.3 792
Public Administration, Government, and Other	159	1.2	252 1.2 93	2,233	19.5	1,545 8.1 (688)
Total	12,944	99.9%*	20,304 100.1%* 7,360	11,464	100.1%*	19,101 100.2%* 7,637

*Error due to rounding.

Sources: Data on employment by area and by type for 1965 were obtained from reports and printouts of the Bay Area Transportation Study Commission (predecessor to the Metropolitan Transportation Commission) derived from data furnished by the California Department of Economic Development. Data on employment by area and type for 1970 were derived by Arthur D. Little, Inc., from information contained in the U.S. Census of Population and Housing and contained in special computer runs furnished by the Metropolitan Transportation Commission.

(5) Civic Center-Entertainment District Area

This area comprises the Civic Center and the area east to Powell which includes major hotels and places of entertainment. The area accounts for about 16% of total employment in the Downtown district and increased by 17% (excluding construction) between 1965 and 1970 for a gain of 4500 permanent jobs. Over 30% of total employment is in government, which is of course chiefly located in and around the Civic Center. Other major sources of employment are retail trade, personal services (including hotels), and entertainment services, located farther east. FIRE, business services, and professional services account for significant employment. Most of the net gain in employment was in FIRE and professional services (some of the reported increase in professional services may in fact be government employment). A decline apparently occurred in wholesale trade and personal services employment (Table IV-18).

b. Land Use Trends

Since new development in this part of the city occurs almost entirely through the redevelopment of already-developed parcels, little change in ground floor land use would be expected. The reported increase in industrial land use and corresponding decline in commercial land use probably resulted from reclassification of merchant wholesalers from commercial to industrial use. (See Table IV-19.) Public use showed the largest change, an increase of 20 acres, chiefly as a result of the Golden Gateway Redevelopment Project. Vacant land declined and represented only 1% of total land in the area in 1970. A total of 47 acres of land in parking, service stations, and other automobile-related uses was reported in 1970, about 5% of total land, most of it in the Golden Gateway and Civic Center-Tenderloin areas.

(1) Financial, Administrative, and Retail District

Vacant land and land in public use increased by small amounts in this central area between 1965 and 1970 and commercial land use appears to have declined slightly. This means that a vastly expanded reservoir of office space has been built on even less land. Overall, however, there was little change in the land use pattern, seen in terms of ground floor usage. Virtually the entire area is in retail and office uses and very little land is devoted to parking.

(2) Golden Gateway and West

This part of Downtown has undergone the most radical transformation in land use, with substantial increases in retail and office uses and declines in industrial land use resulting from the redevelopment project. The increase in public land use was also due to this change. Total vacant land declined, as reported, although vacant land held by the Redevelopment Agency and used for parking on an interim basis is still a substantial amount. About 14 acres were reported in parking and related uses in 1970.

TABLE IV-19

LAND USE TRENDS - DOWNTOWN

	Total Gross Acreage	Total Net Acreage	Acreage by Use								
			Residence	Commerce	Industry	Utility	Institution	Private Recreation	Public	Vacant	
Financial, Administrative, and Retail											
1970	139.06	85.41	1.18	69.14	1.44	1.78	0.81	-	7.33	3.73	
1961-64	142.22	88.15	1.35	77.65	0.74	1.58	0.95	-	4.31	1.57	
Change	(3.16)	(2.74)	(0.17)	(8.51)	0.70	0.20	(0.14)	-	3.02	2.16	
Civic Center											
1970	206.15	131.19	12.47	72.31	9.01	1.51	3.31	0.80	31.45	0.33	
1961-64	205.27	128.83	12.61	78.74	3.63	1.50	3.41	-	26.69	2.25	
Change	0.88	2.36	(0.14)	(6.43)	5.38	0.01	(0.10)	0.80	4.76	(1.92)	
Midtown-Van Ness											
1970	136.11	87.14	32.67	39.35	9.32	0.72	3.84	0.12	1.05	0.07	
1961-64	136.11	87.15	32.69	43.22	5.24	0.86	3.43	-	1.27	0.44	
Change	0.00	(0.01)	(0.02)	(3.87)	4.08	(0.14)	0.41	0.12	(0.22)	(0.37)	
Chinatown-Nob Hill											
1970	171.99	115.45	54.83	34.69	5.56	-	12.39	0.10	6.11	1.77	
1961-64	173.10	115.78	56.79	35.90	3.52	0.02	12.18	-	5.82	1.55	
Change	(1.11)	(0.33)	(1.96)	(1.21)	2.04	(0.02)	0.21	0.10	0.29	0.22	
Golden Gateway											
1970	101.10	59.57	0.84	36.17	2.37	0.19	0.43	1.16	16.62	1.79	
1961-64	86.83	50.80	3.00	20.66	9.84	0.19	-	-	4.41	12.70	
Change	14.27	8.77	(2.16)	15.51	(7.47)	0.00	0.43	1.16	12.21	(10.91)	
Total Downtown											
1970	754.41	478.76	101.99	251.66	27.70	4.20	20.78	2.18	62.56	7.69	
1961-64	743.53	470.71	106.44	256.17	22.97	4.15	19.97	-	42.50	18.51	
Change	10.88	8.05	(4.45)	(4.51)	4.73	0.05	0.81	2.18	20.06	(10.82)	

Sources: City of San Francisco, Department of City Planning, The Use of Land in San Francisco, October 1964; and San Francisco Land Use Tabulations for 1970, June 1973.

(3) Chinatown-Nob Hill

Land use in this area was fairly stable, an indication of the high density of development and limited pressures for change. An increase in industrial land use of two acres was reported, but this may have been due to changes in classifications. Vacant land represents about 3% of net acreage.

(4) Midtown-Van Ness

This area had no significant changes other than reported increases in industrial land use and declines in commercial land use, again probably a result of reclassification of wholesalers' warehouses. There are no identifiable land use trends in this area.

(5) Civic Center-Entertainment District Area

Land in public use expanded between 1961 and 1970 and represents about a quarter of total acres in use. Again, a shift from commercial to industrial use is shown, probably a result of reclassification. Vacant land declined slightly and represents less than one-half of 1% of all land in the area. However, land in parking lots and auto-related uses represents almost 15% of total net acreage, reflecting an interim use and the absence of a strong demand for construction of new space in the eastern portion of this area.

c. Employment, Space, and Land Use Projections

Employment in the Downtown area (north of Market Street) is projected to increase by 35,000-51,000 jobs by the year 2000, representing from 45% to 32% of total new employment in the city (for the respective low and high projections). (See Table IV-20.) Almost all of the projected growth is expected to result from increased employment in FIRE, business and professional services, and government, resulting in a demand for an additional 6.8-9.2 million square feet of net new office space by the year 2000. Declines in employment in a few sectors in the Downtown are projected under the low growth scenario and these projected declines (or their absence under the high growth scenario) affect net new office demand. The relatively large share of net new growth allocated to the North of Market area, as against South of Market, is only partially a result of the traditional orientation of certain sectors, particularly professional services and FIRE to this area. South of Market is expected to experience more significant declines in wholesaling and manufacturing employment now housed in older office buildings. Only 31-36% of total projected city growth in the FIRE, TCU, services, and government sectors is allocated to Downtown North of Market over the long term.

By 1985 employment is forecast to increase by 26,000 jobs or slightly more than 2000 jobs per year between 1973 and 1985, 39% of net new employment in the city. Office-using activities in the area are expected to account for 37% of net new growth in the same activities in the city.

TABLE IV-20

PROJECTED NET CHANGES IN EMPLOYMENT, SPACE, AND LAND REQUIREMENTS
DOWNTOWN DISTRICT

Employment	Net Changes		
	1973-1985	1973-2000	
		Low	High
Agriculture, Forestry, Fisheries, and Mining	691	815	1,265
Manufacturing	(521)	(1,710)	(70)
Transportation, Communications, and Utilities	1,794	1,215	2,485
Wholesale Trade	(274)	(1,700)	(610)
Retail Trade	278	(290)	1,800
Finance, Insurance, and Real Estate	7,942	13,570	14,810
Services	10,735	17,265	19,825
Government	<u>5,162</u>	<u>6,000</u>	<u>11,900</u>
Total Allocated by Area	25,807	35,165	51,405
<u>Space and Land Requirements</u>			
Industrial Space - Square Feet (000s)	(19.9)	(32.8)	20.0
Acres	(0.1)	(0.2)	0.1
Plant Space - Square Feet (000s)	(19.9)	(32.8)	20.0
Acres	(0.1)	(0.2)	0.1
Warehse. Space - Square Feet (000s)	-	-	-
Acres	-	-	-
Office Space - Square Feet (000s)	4,758.7	6,768.6	9,152.5
Acres	8.4	12.0	16.2
Retail Space - Square Feet (000s)	148.3	(285.0)	960.0
Acres	1.7	(3.3)	11.0
Hotel Space - Rooms	1,260	1,680	2,800
Square Feet (000s)	1,008.0	1,344.0	2,240.0
Acres	2.3	3.1	5.1
Parking and Auto Services - Spaces	5,323	7,252	8,835
Square Feet (000s)	1,911.0	2,591.7	3,212.3
Acres	8.2	10.8	14.6
Total Net Space - Square Feet (000s)	7,806.1	10,386.5	15,584.8
Acres	20.5	22.4	47.0

Source: Estimates by Arthur D. Little, Inc., based on projections of employment by industry. See Technical Appendix to Chapter IV for methodology.

Demand for new office space in the area should total about 4.7 million square feet over the 12-year period, of which a significant amount has been put in place in the last two years.

Hotel rooms may increase by 1700 to 2800 to the year 2000; 1300 new rooms are projected by 1985.

A major unanswered question is whether or not the availability of less expensive land in Yerba Buena Center will have a more dramatic effect on the location of new office development. The project's plans call for the accommodation of 36,000 employees by 1982, a date which should now be set back at least to 1985 due to project delays. However, this is more than twice the projected new employment in office-using sectors allocated to the South of Market area (as indicated below) and almost equal to the total net increase in office employment allocated to the combined Downtown and South of Market areas by 1985. It is possible that there will be an even more extreme shift of new growth to South of Market than has been assumed or that building in the project area will proceed more slowly than anticipated. These projections assume a reasonable diversion and suggest that marketing of land in Yerba Buena Center will be relatively slow. This is discussed in more detail in connection with the South of Market area.

Long-term projections call for widely varying scenarios with respect to retail employment and space demand, ranging from a decline of 285,000 square feet in retail use to an increase of 960,000 sq ft of retail space by 2000. Under the high projection, if all new retail space were provided on the ground floor, retail space demand would be higher than the ground floor area required to support new office development. In the more likely case that new retail space is provided at floor area ratios averaging from 2.0 to 4.0, only 75% to 40% of ground floor space devoted to office development will be devoted to retail use if combined within the same structures. With some retail demand obviously satisfied in areas different from those committed to high-rise offices, the proportion of ground floor space in new development devoted to retail use is likely to be much less, unless some effort is made to obtain more ground floor use.

The best estimate is for a net additional 150,000 square feet of retail space to be added by 1985, occupying less than 2 acres of ground area at an average floor area ratio of 2, or less than 20% of the ground area required to accommodate new office development at maximum permissible densities.

Estimated demand for parking and automobile services arising from increased employment in this area is estimated to amount to an additional 5300 spaces by 1985, with a range of 7200-8800 spaces by the year 2000. By 1985 this would require an additional 7 acres devoted to parking and auto uses if garages were built at an average FAR of 6. These parking projections assume high transit patronage (70-75% of all trips) and current car occupancy rates. A lower demand could occur with even higher transit

usage and car pooling. However, the demand will be significant, given new projected office employment growth. By the year 2000 an additional 10-12 acres or more could be required to accommodate parking demand, from 70-90% of the total land area required for office development. Parking demand by retail and hotel customers could require an additional 455 spaces by 1985 and up to 2300 more spaces by the year 2000.

d. Land Use Issues

As of the 1970 land use survey a total of 12 acres was vacant or held by the Redevelopment Agency for new development in the entire Downtown district. An additional 13 acres were in parking lots and used car lots. Much of this land was in scattered parcels, however, far from the probable location of new office development. Long-range projections call for an additional 20-44 acres of land in high density use in this area, while the need by 1985 will amount to an estimated additional 19 acres of vacant or redeveloped land. Theoretically, existing vacant land or near-vacant land could accommodate much of the projected demand to house new space over the next 10 years. More likely is private redevelopment of existing low- and medium-rise office buildings for high-rise construction.

Optimum use of land in this very high density area would be achieved, if high employment growth is to continue, by ensuring that parking demand is satisfied within the area to the extent possible, only at high floor area ratios, in order to minimize the amount of land devoted to such uses. Given land values in the financial and retail districts, it is not likely that parking lots would be maintained for long periods in any event. Without provision for parking in the area itself or on its fringes, some diversion of parking space construction into the South of Market area is likely. A significant increase in parking spaces in the North of Market area would pose serious problems of increased congestion due to the high density of traffic in the area. It may therefore be desirable to ensure that such demand is satisfied in some way outside the area of actual employment by means of remote parking and shuttle bus services. Increases in retail demand would not appear in themselves to account for much of the increased demand for parking.

Given the very high density of the North of Market area and probability of further substantial increases in employment despite an increasing share diverted to South of Market, the city may wish to add further impetus to growth in South of Market at the expense of the Downtown area north of Market Street. In particular, given the availability of land in Yerba Buena Center for new office development, it may be desirable to ensure that new development occurs in that area to the greatest extent possible prior to continued, extensive redevelopment North of Market. It does not appear that this shift will occur naturally, at least to the extent of leading to a full build-out of the YBC area prior to significant expansion of employment North of Market. One possibility is a change in zoning to reduce potential development North of Market.

Demand for retail space appears to be relatively weak, compared to the demand for new office space. Therefore it is unlikely that significant proportions of the ground floor area of new office buildings will normally be devoted to retail uses. Most of the new retail space is likely to be located in the retail and hotel districts. To the extent that the city wished to encourage a greater balance of retail uses throughout the Downtown, it would be necessary to limit floor area ratios in new retailing in some areas and thereby encourage more ground floor use.

3. South of Market

a. Employment Trends

The South of Market area as a whole experienced a substantial increase in employment between 1965 and 1970, an increase which is still continuing (Table IV-21). Despite the fact that the bulk of employment in 1965 consisted of categories of employment which have declined in the city as a whole -- manufacturing, transportation, communications, utilities, and wholesaling -- the South of Market area has held its own. Total estimated employment increased by 19% in the five-year period. However, after discounting for construction assigned to this area and attributable to new office construction, redevelopment, and BART, total growth in permanent employment is estimated at only 10,100 jobs over the five-year period. This growth occurred in virtually every sector, led by TCU, miscellaneous and professional services, and FIRE. Most of it was accommodated in office buildings located east of Third Street between Market and Folsom. A surprising increase in retail employment is indicated; however, wholesaling employment declined severely.

Despite the overall decline in manufacturing employment, available data show an increase in the South of Market area. However, it occurred in the Market-Howard corridor, due chiefly to an increase in headquarters office employment of major manufacturers as well as some gains in apparel and printing. It appears that actual production activities remained fairly stable throughout the area, because of the strength of the apparel and printing industries in South of Market as well as some gains in other manufacturing sectors dominated by small firms.

South of Market actually consists of several distinct functional areas: the Market-Howard corridor, the area east of Third and south of Howard, including Rincon Hill and the area near Piers 26-46A, and the area west of Third and south of Howard, which becomes more industrial as one moves south (see Figure IV-6).

(1) The Market-Howard Corridor

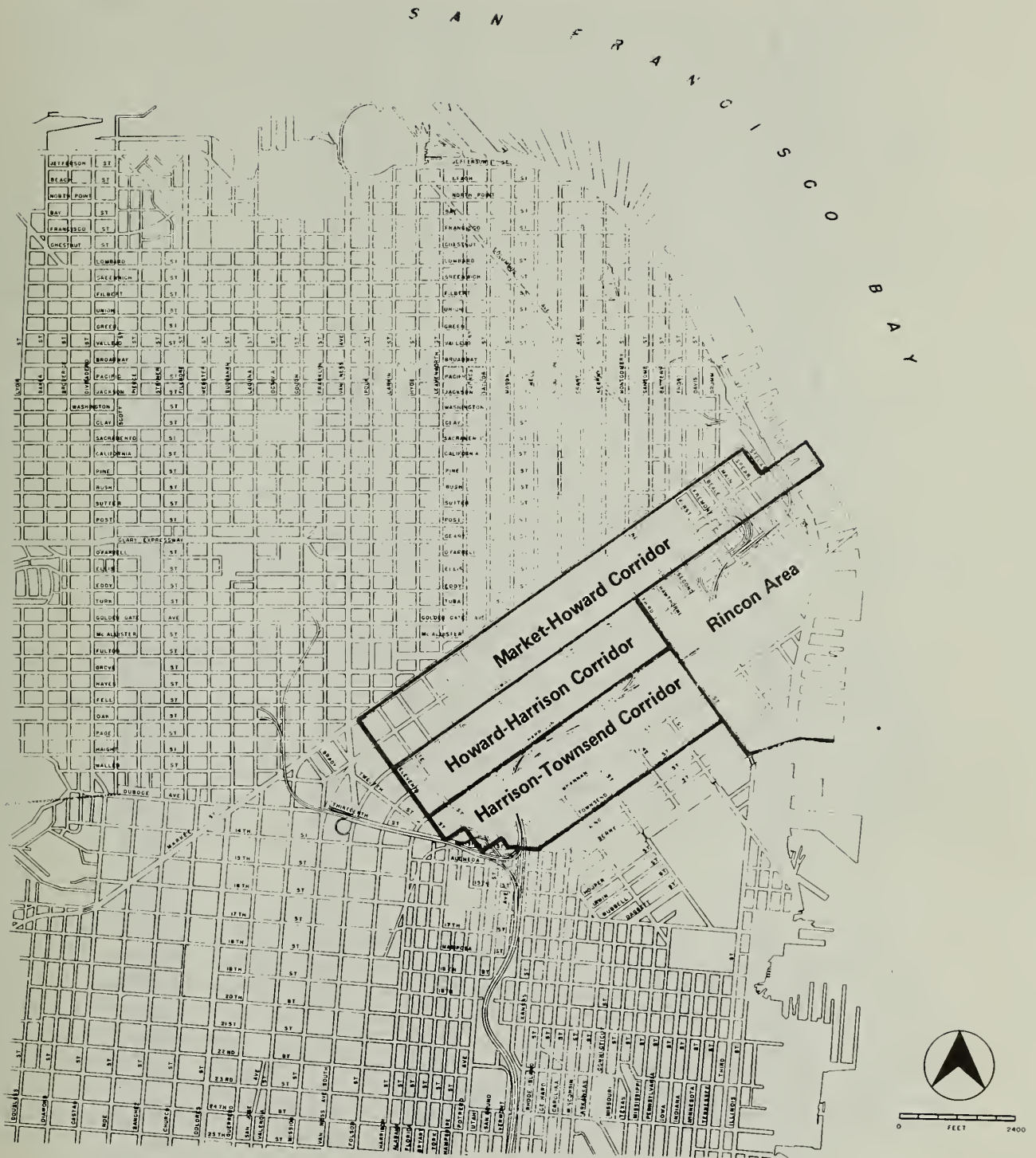
This strip paralleling Market Street contains major wholesaling, retailing, and transportation and communications activities (Table IV-22). It is also the location of many business and personal service establishments catering both to businesses in Downtown and to residents, tourists, and commuters. There are also many manufacturing activities, with the heaviest concentration of actual plants in apparel and printing. Most of the manufacturing activity is concentrated between First and Seventh streets

TABLE IV-21

EMPLOYMENT TRENDS - TOTAL SOUTH OF MARKET

<u>Industry Group</u>	<u>1965</u>		<u>1970</u>		<u>Change</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
Agriculture, Forestry, Fisheries, and Mining	23	0.02%	762	0.6%	739
Contract Construction	710	0.7	9,756	8.3	9,046
Manufacturing	20,081	20.2	20,947	17.8	866
Transportation, Communi- cations, and Utilities	19,978	20.1	24,611	20.9	4,633
Wholesale Trade	14,826	14.9	10,126	8.6	(4,700)
Retail Trade	9,346	9.4	11,145	9.5	1,799
Finance, Insurance, and Real Estate	4,481	4.5	7,390	6.3	2,909
Business and Repair Services	7,280	7.3	7,036	6.0	(244)
Other Services	8,384	8.4	12,169	10.3	3,785
Public Administration and Government	14,406	14.5	13,730	11.7	(676)
Total	99,515	100.0%	117,672	100.0%	18,157

Sources: Data on employment by area and by type for 1965 were obtained from reports and printouts of the Bay Area Transportation Study Commission (predecessor to the Metropolitan Transportation Commission) derived from data furnished by the California Department of Economic Development. Data on employment by area and type for 1970 were derived by Arthur D. Little, Inc., from information contained in the U.S. Census of Population and Housing and contained in special computer runs furnished by the Metropolitan Transportation Commission.



Base Map Source: San Francisco Department of City Planning.

FIGURE IV-6 MAP OF SOUTH OF MARKET SUBAREAS

although the Yerba Buena Redevelopment Project has forced the relocation of many small manufacturers located between Third and Fourth. Transportation and communication activities are found in the easternmost portion, including the Southern Pacific headquarters and office activities located near the port and the financial district. Wholesaling is present throughout the area and represents a declining but still significant source of employment. Finance, professional services, and business services are increasing east of Third, close to the financial district north of Market. To date, most new construction has occurred east of Third Street. As a result, some wholesaling, warehouse, and manufacturing space has been eliminated. Yerba Buena Center eliminated similar space west of Third Street.

(2) Rincon Hill Area

Almost a third of employment in this area has been and continues to be in manufacturing activities (Table IV-22). More than half of manufacturing employment is in the food industry. This area is located immediately adjacent to the Bay Bridge on-ramps as well as to the port, accounting in part for the location of the food industry, including the city's two major coffee producers. Coffee is the port's major import. Topography, the freeways, and bridge ramps appear to have created a natural barrier against expansion of the financial district south of Folsom.

Manufacturing employment has remained fairly stable despite steep drops in the food industry in San Francisco. The city's largest printer is also located here. Only retail employment declined. Overall employment gained 29%. The largest increases have been in TCU and FIRE, reflecting the construction of new office and utility buildings on Howard, Folsom, and north-south streets and continued port activity at Piers 26-46. With wholesaling and manufacturing representing almost half of total employment in the area, projections suggest the possibility of significant declines in these sources of employment.

(3) Howard-Harrison Corridor

This area, farther southwest, has much lower total employment than the Rincon area (Table IV-22). A variety of manufacturing activities, as well as wholesaling and warehousing and various service activities, have been major sources of employment. Employment is estimated to have increased 10% between 1965-70, but only because of an increase in construction employment allocated to this area. Discounting for construction, total employment has declined by 3%, due to declines in wholesaling, manufacturing, and business and repair services. Some of the decline resulted from displacement caused by YBC in the eastern part of the corridor.

Printing and publishing and machinery manufacturing account for a significant portion of manufacturing employment, but there is no dominant industry. Auto and truck repair and rental services account for much employment. Like the area farther south, this area houses a great variety of commercial and industrial activities and serves as a lower density back-up area for the more developed area closer to Market.

(4) Harrison-Townsend Corridor

Employment in this section has increased 23% since 1965, including increases in construction employment (Table IV-22). The gain was 13% in permanent employment. Overall employment density is about the same as in the Howard-Harrison corridor. About 22% of employment is in manufacturing, which increased slightly between 1965-70, apparently as a result of relocations by firms displaced from the other sections. Employment in wholesaling declined sharply. Employment in trucking and warehousing has apparently increased. The food industry accounted for about 25% of manufacturing employment in 1965; it has probably declined since that time as a result of brewery closings. There are no other dominate industries in terms of employment share.

b. Land Use Trends

Land classified as being in industrial and commercial uses has declined in South of Market, in favor of increasing utility (transportation and communication) and public uses. (See Table IV-23.) The reported increase in industrial uses and decline in commercial uses in the Market-Howard corridor is most likely due in large measure to a change in the classification of warehouses from commercial to light industrial. There has also been a slight increase in vacant land, not including land in Yerba Buena Center. The large increase in public uses has been accounted for by construction of I-280, the Yerba Buena Center Redevelopment Project, construction of the Hall of Justice, and expansion of other public uses. Most of the decline in industrial use has occurred in the easternmost and southernmost portions of the district where heavier industry has traditionally been located. An even larger decline occurred in commercial land uses, probably older office and retail space on land now occupied by new office buildings, office-type structures for utility purposes serving the Downtown and YBC.

According to the 1970 survey, 44% of all land classified in commercial use was used for parking lots, used car lots, and parking garages. The high use of land for parking in this area is related to three factors:

- Speculative activity related to downtown office construction,
- Interim use of land for parking where new construction is planned, and
- The substantial increase in parking demand resulting from increased downtown employment.

As more employment is accommodated in high buildings on less land, adjacent land devoted to parking increases. The combination of demolition of buildings in anticipation of development for office purposes and the demand for parking can make parking uses economically profitable on an interim basis, as against low-rent industrial uses in older buildings with high maintenance costs.

TABLE IV-23

LAND USE TRENDS - SOUTH OF MARKET

	Total Gross Acreage	Total Net Acreage	Acreage by Use							
			Residence	Commerce	Industry	Utility	Institution	Private Recreation	Public	Vacant
Market-Howard Corridor										
1970	292.82	193.00	10.50	95.20	47.86	8.46	2.99	0.48	26.48	1.03
1961-64	298.61	194.45	11.41	119.25	36.21	8.29	1.68	-	14.20	3.41
Change	(5.79)	(1.45)	(0.91)	(24.05)	11.65	0.17	1.31	0.48	12.28	(2.38)
Rincon Area										
1970	272.40	175.98	1.79	35.23	64.73	22.17	2.26	-	46.90	2.90
1961-64	286.50	175.86	3.01	41.34	83.36	13.29	1.67	-	31.24	1.95
Change	(14.10)	0.12	(1.22)	(6.11)	(18.63)	8.88	0.59	-	15.66	0.85
Howard-Harrison Corridor										
1970	178.63	120.51	12.61	23.69	62.91	2.17	3.22	-	13.22	2.69
1961-64	172.99	120.68	13.04	32.81	65.93	-	3.57	-	4.46	0.87
Change	5.64	(0.17)	(0.43)	(9.12)	(3.02)	2.17	(0.35)	-	8.76	1.82
Harrison-Townsend Corridor										
1970	244.23	175.06	2.99	28.16	86.11	19.61	1.96	0.23	32.23	3.77
1961-64	243.38	176.60	3.55	43.06	97.47	12.57	0.30	-	19.13	0.52
Change	0.85	(1.54)	(0.56)	(14.90)	(11.36)	7.04	1.66	0.23	13.10	3.25
Total South of Market										
1970	988.08	664.45	27.89	182.28	261.61	52.41	10.43	0.71	118.83	10.29
1961-64	1,001.48	667.59	31.01	236.46	282.97	34.15	7.22	-	69.03	6.75
Change	(13.40)	(3.14)	(3.12)	(54.18)	(21.36)	18.26	3.21	0.71	49.80	3.54

Sources: City of San Francisco, Department of City Planning, The Use of Land in San Francisco, October 1964; and San Francisco Land Use Tabulations for 1970, June 1973.

Almost 70% of all land identified as being in industrial use is classified in light industrial use, including warehousing, machine shops, and similar uses capable of occupying small buildings and not requiring specialized structures. About 100 acres of land in South of Market can be considered available for new development, including land acquired by the Redevelopment Agency in YBC, land now used for parking lots, and vacant land.

c. Employment, Space, and Land Use Projections

South of Market is projected to have a net increase ranging from 13,500-46,000 jobs by the year 2000 (from 1973). This net increase is projected to be composed chiefly of a decline in employment in manufacturing, trucking, and warehousing and an addition of 20,000-40,000 jobs in office activities. South of Market would have from 17-27% of net new employment in the city over the 27-year period (Table IV-24).

Under the high growth projection, the much higher total net increase projected results both from greater projected increases in office activities and retailing allocated to this area, and from much lower projected declines in manufacturing and wholesaling employment. In addition, higher employment is projected for communications, utilities, and transportation services. These projections are unconstrained -- that is, they assume no conflict between different activities in competition for space. Given available vacant land in YBC and scattered parcels in parking uses, adequate land should be available overall.

The average level forecast for 1985 calls for a net increase in employment of 14,000 jobs in South of Market. The net increase in office jobs is projected to be about 16,000, offset by a decline of about 2000 jobs in non-office work.

The major sources of potential decline in manufacturing employment in South of Market are the food, fabricated metals, printing, and apparel industries which presently account for substantial employment in the area, as well as a variety of small firms engaged in miscellaneous manufacturing activities.

Under the low growth projection more land area could be abandoned by manufacturing and wholesaling than would be required to accommodate new demands for office space. This is also the case under the 1985 forecast of employment. Given the current availability of substantial amounts of vacant land in the area, this suggests the possibility of adequate land available both to accommodate new growth and to accommodate existing uses, if new office development and parking accommodation occur at the highest permissible densities.

If, however, office employment grows in accordance with the high projection and manufacturing and wholesaling demand remain more stable, the land requirements of the growing sectors will exceed available vacant and redevelopment land, probably inducing demolition of existing manufacturing

TABLE IV-24

PROJECTED NET CHANGES IN EMPLOYMENT, SPACE, AND LAND REQUIREMENTS
SOUTH OF MARKET DISTRICT

	Net Change		
	<u>1973-1985</u>	<u>1973-2000</u>	
		<u>Low</u>	<u>High</u>
<u>Employment</u>			
Agriculture, Forestry, Fisheries, and Mining	-	-	-
Manufacturing	(1,627)	(5,330)	(285)
Transportation, Communications, and Utilities	2,434	1,650	4,860
Wholesale Trade	(692)	(3,800)	(1,650)
Retail Trade	345	(60)	2,230
Finance, Insurance, and Real Estate	4,917	8,400	14,810
Services	5,413	8,700	16,415
Government	<u>3,440</u>	<u>4,000</u>	<u>7,600</u>
Total Allocated by Area	14,230	13,560	43,980
<u>Space and Land Requirements</u>			
Industrial Space - Square Feet (000s)	(891.8)	(2,899.1)	(455.4)
Acres	(10.6)	(35.4)	(7.9)
Plant Space - Square Feet (000s)	(595.7)	(1,947.8)	(157.4)
Acres	(6.1)	(20.8)	(3.3)
Warehse. Space - Square Feet (000s)	(296.1)	(951.3)	(298.0)
Acres	(4.5)	(14.6)	(4.6)
Office Space - Square Feet (000s)	3,056.8	3,740.0	7,143.5
Acres	7.0	8.6	16.4
Retail Space - Square Feet (000s)	183.3	(136.0)	1,185.0
Acres	2.1	(1.6)	13.6
Hotel Space - Rooms	630	840	1,400
Square Feet (000s)	504.0	672.0	1,120.0
Acres	1.2	1.5	2.6
Parking and Auto Services - Spaces	4,175	2,797	7,559
Square Feet (000s)	1,509.3	1,087.0	2,885.7
Acres	6.7	6.2	15.6
Total Net Space - Square Feet (000s)	4,361.6	2,463.9	11,878.8
Acres	6.4	(20.7)	40.3

Source: Estimates by Arthur D. Little, Inc., based on projections of employment by industry. See Technical Appendix to Chapter IV for methodology.

and warehouse space to accommodate office development and thereby hastening the decline of the former two sectors in the area. This is not a likely occurrence but a few key industries, such as food processing and apparel, could be affected if growth continued in the eastern part of South of Market instead of being accommodated in YBC. It is particularly likely that growth in the apparel industry might not be possible in South of Market in the event of high level office employment growth.

The forecast for 1985 is for a net increase of about 180,000 square feet of space for retailing, requiring the equivalent of 4 acres of ground floor area or 2 acres at an average floor area ratio of 2. This means that justifiable additions to retailing space will probably represent from only 25-50% of ground floor area in new office developments. Projections for the year 2000 suggest a wide range of possible retail space demand, varying from a decline of 135,000 sq ft to an increase of almost 1.2 million sq ft. Under the higher projections, ground floor retail space could be justified in connection with virtually all new office development, although the demand would arise chiefly from resident population, nonresident shoppers, and tourists.

Projected demand for space for parking and automobile services ranges from 1.1-2.9 million sq ft of structural space by the year 2000, with a forecast demand for 1985 of an additional 1.5 million sq ft. This space would accommodate an additional 4200 parking spaces by 1985 and up to 7500 additional spaces by the year 2000. If parking garages are built to a floor area ratio of 6, the land requirements to accommodate parking demand and automobile services are expected to range from an additional 6-16 acres by the year 2000. An estimated 6-7 acres would be required by 1985. Any lowering of the actual FAR of new parking uses through the substitution of lot space for garages would, of course, increase land requirements for this use. These projections do not include parking for retail or hotel customers, which could require an additional 500 spaces by 1985.

The number of new hotel rooms is projected to range from 800-1400 by the year 2000, with 600-700 new rooms by 1985.

d. Land Use Issues

Medium growth-level employment projections for 1985 suggest the absence of major competition for land among different uses on an overall basis in South of Market. That is, given existing vacant land, redevelopment land, and land in parking lot use, there is adequate room to accommodate new office development, parking demand in multi-story garages, and retailing without reducing land allocated to manufacturing, wholesaling, and trucking and warehousing uses at levels expected to be required. The real estate market does not, however, necessarily operate so as to optimize the allocation of land to all possible uses, so that displacement of existing manufacturing and other relatively low-rent uses could occur under pressure for new office development and parking, thereby accelerating (if not causing) the relocation of manufacturers out of the area and probably out of the city.

The possibility of this occurrence is raised chiefly in the area east of Third Street where pressure for new office development appears to be the most intense. Since this area houses a substantial portion of the apparel industry, the latter could be forced to relocate. This industry, if forced to move, is one manufacturing sector least likely to relocate out of the city, but inexpensive loft space of the type required and desired by the industry is becoming more difficult to find in the city. Other than the South of Market area, the northern Potrero and Mission districts offer the only fairly good alternatives in supply of general industrial space at relatively low rents. The apparel industry is likely to relocate, if forced, first to more southerly areas in South of Market, near Brannan and Townsend. However, the city must guard against the removal of all space required by this industry if it is to remain stable or to continue expansion.

Pressure for office development south of Folsom in the Rincon Hill area is less certain. To date there is little evidence of new development occurring southeast of the Hill, because of the natural topographic barrier mentioned before and the presence of some large manufacturing operations. The area is somewhat distant on foot from the center of the financial district and is not well served by public transit. However, there is evidence of increasing parking lot use in the area and this area may be susceptible to increasing parking use if, as expected, manufacturing continues to decline. There appears little reason to expect, however, that advancing office development will force out manufacturing, warehousing, and transportation uses in the near future.

The rate at which this entire eastern portion of South of Market is converted to new office development to meet growing demand will depend to a substantial degree on the success of the Redevelopment Agency in marketing land in the YBC project for new office development. Recent and current trends suggest that the project itself may have difficulty in competing for new office development to meet expanding demand from FIRE and business and professional services, which have continuously shown a preference for locations farther east and as close to Market Street as possible. Relatively cheaper land costs are likely to make more of a difference to utilities, communications, and wholesaling users seeking new office space.

It should be noted that the total net increase in office space demand projected for South of Market by 1985 is less than half the total amount of office space planned to be built in YBC. Since much of this demand has been or will be filled by recent construction and construction in progress, the likelihood of marketing all of the land in YBC within the next 10 years is extremely remote, particularly given what is allowed by current zoning east of YBC and along Market and Mission streets to the west. Even projections of office demand to the year 2000 for South of Market suggest difficulty in building all of the planned office space in YBC. However, it is possible that more future office demand will be shifted from north of Market to South of Market than is projected. The shift would have to be quite large. Therefore, the city should not assume that full development of YBC office sites will occur automatically, even by the year 2000.

One other important land use issue presented by the projections is, as in the case of the Downtown area north of Market, the magnitude of projected demand for accommodation of parking demand and automobile services. By 1985 demand is forecast for an additional 4200 parking spaces, with the 2000 projections ranging from 2800-7600 spaces, or an average of 5200 new spaces. These projections assume that parking demand generated by north of Market development is actually satisfied north of Market, which is not likely. Thus, the actual demand South of Market will be greater, with corresponding decreases north of Market. If this new demand for parking spaces is not satisfied in multi-story garages, the additional land requirements could be as high as 34 acres in parking lots by 1985, and as high as an additional 61 acres by the year 2000 under the high projection. Where land is currently occupied by relatively low-rent manufacturing, trucking and warehousing, and wholesaling uses at low floor area ratios, the combination of high parking demand, speculative activity related to the possibility of new office construction, and reasonable profitability of parking uses could lead to the displacement of manufacturing and other industrial space in favor of parking lot uses, as has been occurring in the South of Market area over the past decade. This would not only cause a possibly undesirable removal of space which is attractive to a large number of small manufacturing firms, but would also convert land in this central area to a very low-intensity use. The city may therefore wish to consider measures to ensure that parking demand is satisfied, to the extent it is satisfied at all in the South of Market area, at the highest floor area ratios feasible.

Another alternative is to seek more remote sections of the city, where declines in manufacturing and other uses, are likely to make available significant amounts of land usable for remote parking. Lastly, the city could decide not to satisfy potential parking demand in order to increase transit use.

There is little question but that, despite the probable declines in manufacturing and other industrial uses in the city, the South of Market area, particularly the lower Howard to Townsend corridor, provides the only significant reservoir of generalized industrial space attractive to a wide variety of small manufacturing, warehousing, wholesaling, and business and repair service establishments. It therefore always affords an opportunity for potential replenishment of the city's declining manufacturing base in a way that very few other areas of the city can.

Finally, a potential surplus of existing retail space appears to be present in South of Market. To the extent that increases in retail space demand occur, the demand is likely to be for different types of retailing uses than are dominant in the area today, particularly eating and drinking places and other employee and tourist-oriented retailing. Therefore, a necessary consolidation of retail activity in connection with new office development can be expected, with removal of retailing space outside the areas of major tourist shopping activity. Without such consolidation no more than 40-50% of total ground floor area in new office developments is likely to be justifiably devoted to retailing, and possibly less.

If it is desired to increase the amount of ground-floor retailing in new office development, it will be necessary to remove competitive, scattered retail space. Although there is a direct relationship apparent between increased office employment and increased retail demand and employment, office employees do not spend substantial amounts at their places of work, compared to residents. The ratio of office employees to retail employees is about 50 to 1. Eating and drinking places account for half of employment generated by new commuters. In terms of retail space demand by office employers, most of it will be required for eating and drinking places and apparel and appliance stores.

4. Potrero District

This industrial area includes both sides of China Basin Channel, the area to the north and east of Potrero Hill, and the Central Basin waterfront area. It has long been one of the city's primary industrial areas and a transportation center. (See Figure IV-7.)

a. Employment Trends

Employment is estimated to have declined by 3700 jobs or 22% between 1965 and 1970 in this industrial area (Table IV-25). Declines in manufacturing and wholesaling employment were the major source of decline although a large drop also occurred in TCU, possibly as a result of declining port activity in this part of the waterfront. Small gains are shown in contract construction, retail trade, FIRE, and business services, all of which occurred in the northern part of the area, around China Basin Channel and possibly along Townsend Street in South of Market.

(1) China Basin Area

Wholesaling, trucking and warehousing, and communications have long been predominant uses in this area, along with some manufacturing uses along 16th and 17th streets. In 1965 most manufacturing employment was in metal products, printing, food, and chemicals. One major apparel manufacturer has recently located on 16th Street and another nearby on 17th Street. Total employment is estimated to have declined by 1700 jobs during the 1965-1970 period (Table IV-26). The area is also used for open storage by contractors, which may account for the reported increase in construction employment assigned to the area. There has been no major construction activity, other than the Southern Freeway.

More than two-thirds of the workers in the area are male, the two major occupational categories, craftsmen and transportation workers, reflecting the transportation activities in the area. More than 50% of employment in the area is in transportation, communications, and utilities, reflecting the dominance of the Southern Pacific Railroad yards and major trucking firms. An additional 16% of employment is in wholesale trade and 13% in manufacturing. Declines in manufacturing employment are a reflection of citywide drops in the metal products and food industries. With trucking and warehousing and wholesale trade traditionally the dominant sources of

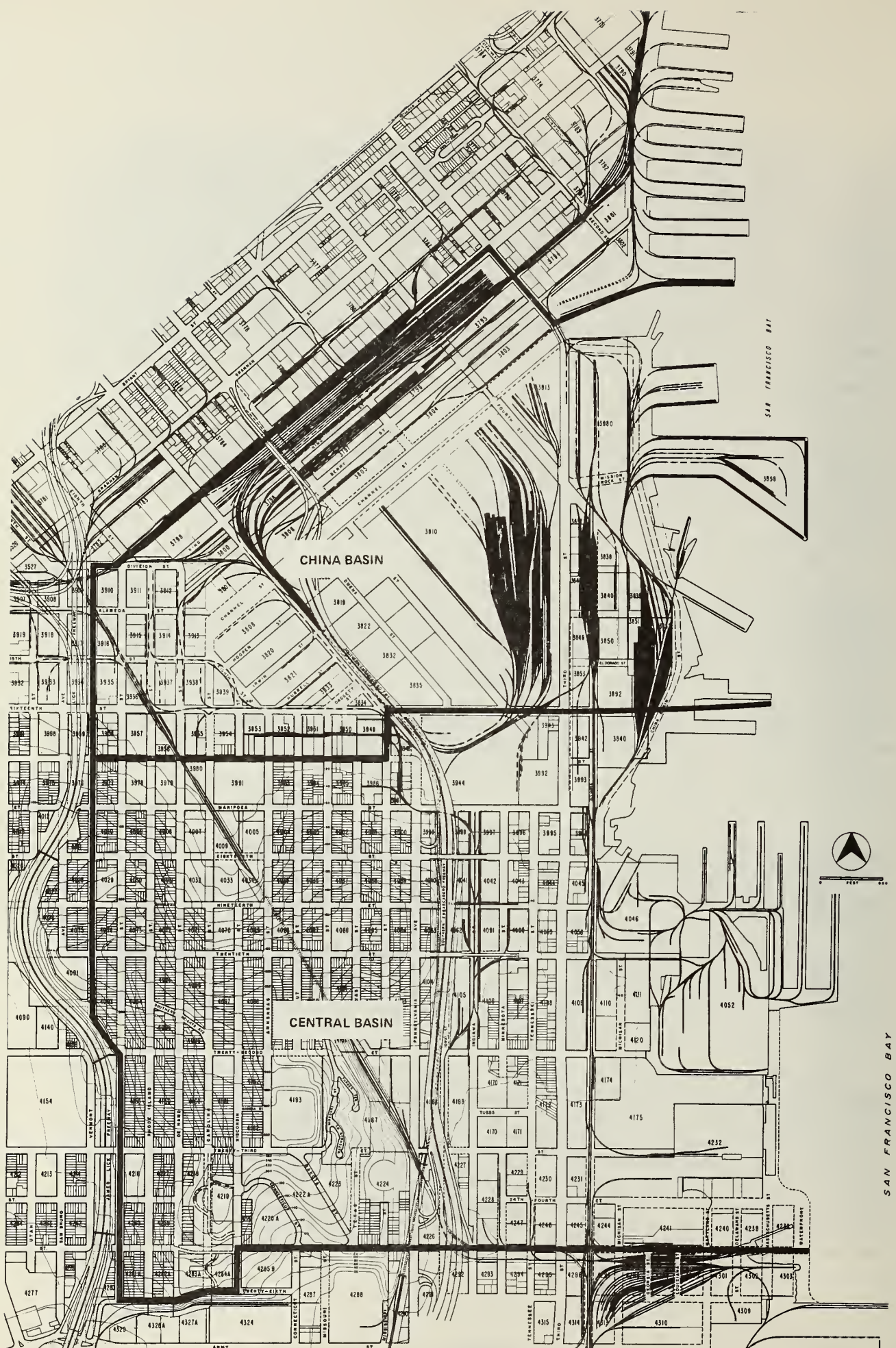


FIGURE IV-7 MAP OF POTRERO DISTRICT

TABLE IV-25

EMPLOYMENT TRENDS - TOTAL POTRERO INDUSTRIAL DISTRICT

<u>Industry Group</u>	<u>1965</u>		<u>1970</u>		<u>Change</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
Agriculture, Forestry, Fisheries, and Mining	74	0.5%	32	0.3%	(42)
Contract Construction	599	3.7	794	6.3	195
Manufacturing	5,851	35.9	3,763	29.9	(2,088)
Transportation, Communi- cations, and Utilities	4,900	30.1	4,051	32.2	(849)
Wholesale Trade	3,575	21.9	2,217	17.6	(1,358)
Retail Trade	383	2.3	577	4.6	194
Finance, Insurance, and Real Estate	122	0.7	357	2.8	235
Business Services					
Other	800	4.9	766	6.1	(34)
Total	16,304	100.0%	12,557	99.8%*	(3,747)

*Error due to rounding.

Sources: Data on employment by area and by type for 1965 were obtained from reports and printouts of the Bay Area Transportation Study Commission (predecessor to the Metropolitan Transportation Commission) derived from data furnished by the California Department of Economic Development. Data on employment by area and type for 1970 were derived by Arthur D. Little, Inc., from information contained in the U.S. Census of Population and Housing and contained in special computer runs furnished by the Metropolitan Transportation Commission.

TABLE IV-26

EMPLOYMENT TRENDS - POTRERO INDUSTRIAL DISTRICT

Industry Group	China Basin				Central Basin			
	1965		1970		1965		1970	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Agriculture, Forestry, Fisheries, and Mining	61	0.8%	19	0.3%	13	0.2%	13	0.2%
					(42)			0
Contract Construction	1	0.01	341	5.5	598	7.1	453	7.1
Manufacturing	1,937	24.4	788	12.7	(1,149)	46.7	2,975	46.7
Transportation, Communica- tions, and Utilities	3,750	47.3	3,178	51.4	(572)	13.7	873	13.7
Wholesale Trade	1,988	25.1	1,012	16.3	(976)	18.9	1,205	18.9
Retail Trade	112	1.4	372	6.0	260	3.2	205	3.2
Finance, Insurance, and Real Estate	16	0.2	273	4.4	257	1.3	84	1.3
Business Services								
Other	58	0.7	205	3.3	147	8.9	561	8.8
Total	7,923	99.9%*	6,188	100.0%	(1,735)	100.0%	6,369	99.9%*(2,012)

*Error due to rounding.

Sources: Data on employment by area and by type for 1965 were obtained from reports and printouts of the Bay Area Transportation Study Commission (predecessor to the Metropolitan Transportation Commission) derived from data furnished by the California Department of Economic Development. Data on employment by area and type for 1970 were derived by Arthur D. Little, Inc., from information contained in the 1970 Census of Population and Housing and contained in special computer runs furnished by the

employment in the area, losses of employment due to technological changes in those industries as well as declines in demand in the city have caused severe declines in employment formerly located in this area although trucking and warehousing facilities are still present.

(2) Central Basin Area

This area suffered a loss of about 2000 jobs between 1965 and 1970, or an estimated 24% of 1965 employment levels (Table IV-26). Drops occurred in every category of employment, resulting in a large number of building vacancies. Further losses in employment are known to have occurred since 1970 with the closing of the American Can Company plant on Third Street, the closing of a major ship repair firm, and reduction in activity or relocations by other firms in the metal products industry. Almost half of total employment is still in manufacturing, almost entirely in shipbuilding and repair. The Bethlehem drydocks and ship repair facilities are the only major ship repair facilities now in operation in San Francisco, since the closing of the U.S. Naval Shipyard at Hunter's Point. However, ship repair contractors do operate out of the Central Basin area without drydocking facilities of their own.

Declines have also occurred in wholesale trade and TCU employment consistent with trends citywide. The area still has significant employment in wholesaling and trucking and warehousing, as well as in water transportation and marine services, but at much lower levels. The presence of a Pacific Gas and Electric Company plant accounts for one source of stable employment in TCU.

As previously mentioned, one large apparel manufacturer moved into the area, west of Third Street, within the last several years, making use of an industrial building abandoned by former manufacturing uses. This area has traditionally been a primary location in the city for heavy industry, both port-related and non-port-related. The decline of such industry in the city has severely depressed the area. Some of the buildings vacated by firms which have moved have special characteristics and are not readily or inexpensively adaptable to other industrial uses. The movement of apparel manufacturers into the northern part of the area does suggest, however, the advantages of the area in terms of proximity to Downtown as well as to freeways.

Some new construction of warehouses and wholesalers' offices has occurred over the past decade and expansion of trucking facilities appears to be in the offing. However, such expansion is unlikely to have any significant impact on employment due to the relatively low employment involved in such activities.

b. Land Use Trends

According to the planning department's land use surveys, land in industrial use declined by 100 acres between 1961 and 1970 while land in utility uses, chiefly railroad rights-of-way and truck terminals, increased by more than 120 acres (Table IV-27). Land in public use increased significantly,

TABLE IV-27

LAND USE TRENDS - POTRERO INDUSTRIAL DISTRICT

	Total Gross Acreage*	Total Net Acreage*	Acreage by Use							Vacant**
			Residence	Commerce	Industry	Utility	Institution	Private Recreation	Public	
China Basin										
1970	432.25	308.41	0.11	1.61	71.24	203.83	-	-	30.50	1.12
1961-64	378.20	304.26	-	0.50	158.71	119.20	-	-	0.73	25.12
Change	54.05	4.15	0.11	1.11	(87.47)	84.63	-	-	29.77	(24.00)
Central Basin and Potrero Hill										
1970	699.78	495.44	145.90	13.41	162.82	101.31	2.53	-	38.67	30.80
1961-64	671.00	484.31	139.45	12.49	177.11	62.86	2.62	-	19.50	70.28
Change	28.78	11.13	6.45	0.92	(14.29)	38.45	(0.09)	-	19.17	(39.48)
Total Potrero Industrial District										
1970	1,132.01	803.85	146.01	15.02	234.06	305.14	2.53	-	69.17	31.92
1961-64	1,049.20	788.57	139.45	12.99	335.82	182.06	2.62	-	20.23	95.40
Change	82.81	15.28	6.56	2.03	(101.76)	123.08	(0.09)	-	48.94	(63.48)

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*The increase in gross and net acreage shown is due in part to a discrepancy between 1960 and 1970 Census Tract boundaries. This change in boundaries accounts for the increase in residential acreage.

**Most of the vacant land reported is residentially zoned land on Potrero Hill.

Sources: City of San Francisco, Department of City Planning, The Use of Land in San Francisco, October 1964; and San Francisco Land Use Tabulations for 1970, June 1973.

resulting both from construction of I-280 along the western portion of the area and acquisition of land for the new Muni bus shops. Land reported as vacant declined, in part due to conversion of vacant land to freeway use and in part due to some new construction of truck and warehouse facilities.

(1) China Basin Area

Sixty percent of the land in this portion of the district is in railroad rights-of-way, including the large Southern Pacific site, as well as spurs for the Western Pacific and Santa Fe railroads near Mission Rock terminal. Although almost no land is actually classified as vacant, the low-intensity uses which predominate give the area an appearance of being almost entirely vacant. Much of the land is used, not only for railroad yards, but also for truck depots (17 acres) and contractors' open storage. Despite the proximity of this area to Downtown, there has been no visible intensification of use. This area has functioned as an important rail transportation and distribution center for San Francisco strongly tied to trade through the port and the city's food, metals, and transportation equipment industries. Decline in manufacturing activity and the shipment of heavy goods through the port has reduced the level of rail activity although there are still significant movements of goods by rail, both down the Peninsula and on barges across the bay to Western Pacific railheads for transcontinental shipment. Piers 54 and 62 are still used for barging of rail cars to the East Bay and Mission Rock Terminal is one of the port's major facilities.

Despite the decline in employment the area appears to have been relatively stable in land use, in part because intensive occupancy was never common. Much of the reported decline in land in industrial use is believed to have resulted from construction of the freeway.

Trends appear fairly clear. Formerly a center for manufacturing, distribution, and wholesaling of goods, the area is increasingly used by contractors for storage and operations and as a location for business service firms unable to find a location in the South of Market area or seeking cheaper space. It continues to be a distribution center. Employment density remains low, at an average of about 70 employees per acre of land in industrial use and only 18 employees per acre of land in both industrial and utility use.

(2) Central Basin Area

Between 1961 and 1970 industrial land use declined while land used for trucking, rail rights-of-way, and other utility uses increased by 50%. Although the amount of total vacant land in the entire area is large, most of this land is located on Potrero Hill and is zoned for residence. Very little actual vacant industrial land exists in the area.

There are a number of building vacancies in the area. The largest vacant space in the area is the American Can building, a specialized building which has remained vacant for a number of years. Freeway access

is good to the south via I-280 and will be much improved from the southern portion to the north when I-280 is connected to the Bay Bridge. Third Street has regular transit service and provides fairly good traffic flow. However, there is considerable conflict between rail lines and streets, streets are in poor condition in some areas, and off-street parking and loading facilities appear to be inadequate. Streets east of Third Street are used for the parking of trucks since adequate on-site space is not available for the major trucking firms in the area.

Like the channel area, this area is close to Downtown and appears to be a good location for warehousing and distribution activities, as well as for business services requiring open land for vehicle storage. New activities in the area comprise chiefly wholesalers with stock in trade, truck rental and trucking firms, and business service establishments.

This area between China Basin and Islais Creek has suffered the second highest employment decline of any area of the city over the past decade. This has resulted in large measure from the fact that it was a prime location of manufacturing industries which have suffered the most dramatic drops in employment in the city.

c. Employment, Space, and Land Use Projections

Long-term projections suggest alternative futures for employment in this area, ranging from a decline of 3100 jobs to an increase of 1400 (Table IV-28). Regardless of total employment, it appears likely that the composition of employment will change, with potential increases occurring only in apparel and electrical machinery manufacturing and in utilities and communications plants. Under the low employment projection an additional 1.3 million square feet of manufacturing space could be vacated, as well as an additional 200,000 sq ft in wholesaling, trucking, and warehousing. This would make available up to 14 additional acres of vacant land for which there is no identifiable demand.

Under the high growth scenario, expansion in the apparel and electrical industries in this area (possibly due to some relocations from South of Market, along with total industry expansion) could result in an increase in demand for industrial space of about 400,000 sq ft with an additional 130,000 sq ft of office-type space related to utilities and communications employment expansion. In total, an additional 20 or so acres might be required to accommodate these uses although the construction of new buildings on vacant land is not to be expected ordinarily from the apparel industry. Additional land may be converted to trucking and warehousing uses if prices become sufficiently depressed to make use of the land for such low-intensity purposes worthwhile.

Given current trends, the most likely forecast for 1985 is for a decline in employment of about 1000 jobs, resulting in an additional 400,000 sq ft of vacant manufacturing space. Although employment in wholesale trade and trucking and warehousing is expected to decline, the demand

TABLE IV-28

PROJECTED NET CHANGES IN EMPLOYMENT, SPACE, AND LAND REQUIREMENTS
POTRERO DISTRICT

	Net Change		
	1973-1985	1973-2000	
		Low	High
<u>Employment</u>			
Agriculture, Forestry, Fisheries, and Mining	-	-	-
Manufacturing	(625)	(2,045)	1,160
Transportation, Communications, and Utilities	(234)	(160)	550
Wholesale Trade	(153)	(840)	(365)
Retail Trade	4	(80)	30
Finance, Insurance, and Real Estate Services	- 30	- 25	- 50
Government	-	-	-
Total Allocated by Area	(982)	(3,100)	1,425
<u>Space and Land Requirements</u>			
Industrial Space - Square Feet (000s)	(210.3)	(1,456.5)	331.8
Acres	3.0	(13.9)	13.7
Plant Space - Square Feet (000s)	(389.4)	(1,274.3)	388.8
Acres	(2.5)	(8.3)	15.4
Warehse. Space - Square Feet (000s)	179.1	(182.2)	(57.0)
Acres	5.5	(5.6)	(1.7)
Office Space - Square Feet (000s)	(16.4)	(141.5)	132.5
Acres	(0.2)	(1.7)	3.3
Retail Space - Square Feet (000s)	-	(40.0)	15.0
Acres	-	(0.7)	0.3
Hotel Space	-	-	-
Parking and Auto Services	-	-	-
Total Net Space - Square Feet (000s)	(226.7)	(1,638.0)	479.3
Acres	2.8	(16.3)	17.3

Source: Estimates by Arthur D. Little, Inc., based on projections of employment by industry. See Technical Appendix to Chapter IV for methodology.

may be present for an additional 180,000 sq ft of warehouse space on five acres of land or so. Whether this demand can be satisfied will depend primarily on the availability of land at prices acceptable for warehouse uses. It is possible that some of the space expected to be abandoned by manufacturers might be converted to warehouse uses, particularly single-story structures. Land costs in the area (from \$3-7/sq ft) are generally estimated to run two to three times the prices which public warehousemen are willing to pay for land. However, there are some wholesalers engaged in rapid turnover of inventory serving the Downtown area who can afford higher land costs. There may also be additional demand for land for vehicle storage for rental cars and trucks.

Generally, the future of the area is quite speculative. New construction for manufacturing is extremely unlikely although there may be additional moves by apparel manufacturers out of South of Market into this area, if older, nonspecialized building space is available. There are no obvious employment-intensive uses for the large amount of land in low-intensity use. The future of this area may depend in large measure on the degree of displacement of existing firms from South of Market.

d. Land Use Issues

Trucking, warehousing, and other activities with relatively little employment seem to be the only potential sources of demand for land in this area and increasing building vacancies are likely. Thus, the area is potentially subject to conversion to nonindustrial uses although any major shift would be difficult without the displacement of some stable activities. Those parts of the area with existing buildings in good condition susceptible to any general industrial use and projected to be abandoned by existing users could be potential receptor sites for manufacturers displaced from South of Market, such as machine shops, apparel shops, and small firms engaged in a variety of fabrication activities and repair services. Such space will be scattered through the area between Third Street and the Southern Freeway. However, there are few buildings in the area which can be easily subdivided into small spaces suitable for small firms and some of the buildings were constructed for highly specialized purposes.

While the area east of Third Street might be reserved for future port-related trucking and warehousing activity, the area west of Third is not likely to be required for major new industrial activities. The problem is that several good existing buildings are located west of Third Street and could be used for a variety of activities.

Redevelopment to provide new warehousing facilities could possibly bring fiscal benefits to the city in higher tax revenues from new construction in excess of redevelopment costs but would not necessarily increase employment. It appears unlikely that new residential use will be viable so long as the area is dominated by various open-air storage, manufacturing, and trucking activities as well as some "messy" industries.

Complete redevelopment for residential or other uses would almost certainly force some premature relocations out of the city of remaining manufacturers although the future is not bright for their remaining.

Some parts of the area might be used as remote parking areas, given the recent construction of I-280 and, presumably, its ultimate completion, making possible the interception of automobiles destined for Downtown and South of Market and provision for transit service for the rest of the trip. It might also be desirable to consider uses in the area which are projected to have increased space demands, chiefly oriented at present to the residential areas, such as medical and health services and automobile repair services, or uses now located in the Mission near residential areas. The recent conversion of the China Basin Building to office use also suggests the increasing possibility of providing low density office space in that area and along Third Street for firms unable or unwilling to pay the costs of new high-rise construction Downtown.

Among all areas, however, the future of this area is the most unclear and the most problematical. Long the major transportation center for San Francisco, it could continue to be so. It should simply be recognized that significant employment is not likely to result from such use. More detailed attention should be given to the marketability of land for warehousing and trucking and, possibly, to the relocation of industries or utility uses from the Mission.

5. Inner Mission

a. Employment Trends

Almost 20,000 jobs are located in the area east of South Van Ness to the James Lick Freeway, from 11th Street to Army Street. Half of these jobs are located in the area north of 17th Street, known as the Northeast Industrial Zone (NEIZ). (See Figure IV-8.) As one goes south the area becomes more residential. Most of the employment is north of 20th Street

Total employment is estimated to have declined by no more than 600 jobs in the Inner Mission between 1965 and 1970 (Table IV-29). However, employment in manufacturing, trucking and warehousing, and wholesaling accounted for a loss of 1200 permanent jobs. Contract construction increased estimated employment by 1100 jobs, in part due to assignment of employees in connection with construction of BART and in part due to the location of several contractors in the area. About one-third of total employment in the area remains in manufacturing, with about 10% each in trucking and warehousing and wholesaling. Employment in services has been increasing as educational service institutions and nonprofit organizations appear to be attracted to vacant warehouses and industrial buildings. The greatest losses in manufacturing and transportation employment were in the more southerly East Mission area.



FIGURE IV-8 MAP OF INNER MISSION

TABLE IV-29

EMPLOYMENT TRENDS - TOTAL INNER MISSION

<u>Industry Group</u>	<u>1965</u>		<u>1970</u>		<u>Change</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
Agriculture, Forestry, Fisheries, and Mining	9	0.04%	87	0.4%	78
Contract Construction	240	1.1	1,343	6.7	1,103
Manufacturing	7,365	35.1	6,360	31.9	(1,005)
Transportation, Communi- cations, and Utilities	2,230	10.6	2,122	10.6	(108)
Wholesale Trade	2,427	11.6	2,280	11.4	(147)
Retail Trade	1,415	6.7	1,515	7.6	100
Finance, Insurance, and Real Estate	2,920	13.9	1,456	7.3	(1,464)*
Business Services					
Other	4,377	20.9	4,803	24.1	426
Total	20,983	99.9%**	19,966	100.0%	(1,017)

*The decline in FIRE shown by 1970 Census data is believed to be inaccurate since part of employment at the Bank of America Data Center should be included. Some of this employment may have been allocated to other areas west of South Van Ness or north of Market.

**Error due to rounding.

Sources: Data on employment by area and by type for 1965 were obtained from reports and printouts of the Bay Area Transportation Study Commission (predecessor to the Metropolitan Transportation Commission) derived from data furnished by the California Department of Economic Development. Data on employment by area and type for 1970 were derived by Arthur D. Little, Inc., from information contained in the U.S. Census of Population and Housing and contained in special computer runs furnished by the Metropolitan Transportation Commission.

(1) Northeast Industrial Zone

Between 1965 and 1970, estimated employment in manufacturing and wholesaling declined by 600 jobs, while employment in trucking and contract construction increased by 650. (See Table IV-30.) The area contains a major concrete batching plant and several contractors. Food processing is and has been the major manufacturing activity in this area, located chiefly in the northern part. This northern portion contains milk processors, bakeries, brewers, and other food plants in which employment has declined over the past 10 years. A significant amount of employment in the apparel industry is also found in this area, due to the presence of one major women's wear manufacturer. The paper, printing, metals, and machinery industries are also sources of employment and wholesaling activities account for 13% of employment, despite a decline. Increasingly, the area is the site of trucking and warehousing and other transportation and distribution activities. Several major industrial buildings have been converted to commercial and institutional use, meeting the expanding demand for space of educational services and various non-profit organizations.

Almost 40% of total employment in this area was still in manufacturing in 1970, according to available data. Since that time, however, further declines have almost certainly occurred due to the closing of some food processing plants and one major brewer north of the Central Freeway.

(2) East Mission

A similar trend is observable in the more southerly portion of the area with the decline in manufacturing employment resulting chiefly from the loss of a brewer and declining employment in machinery manufacturing which has had a strong presence in this area. Employment in trucking and warehousing and other transportation uses also has declined but this has apparently resulted from the overall trend toward lower employment relative to gross business in the industry (Table IV-30).

Compared to the other industrial areas of the city, employment and the level of industrial activity in the Mission appears to be rather stable. However, the decisions of a few firms could have a determinative impact due to the fact that a considerable proportion of total employment is accounted for by several major employers, including Best Foods, Hamm's Brewery, Kilpatrick Bakeries, Foremost-McKesson, and Spreckels Dairies. Prospects for the malt liquor industry are not good, due both to declining sales nationally and trends toward consolidation of production into fewer, larger plants serving entire metropolitan areas. The Mission district also contains some service establishments requiring industrial-type space on large parcels, such as major dry-cleaning and laundry plants and truck and auto rental storage yards. The East Mission area in particular, having available some general small-scale industrial space in good condition appears to be increasingly attractive to service establishments.

TABLE IV-30

EMPLOYMENT TRENDS - INNER MISSION

Industry Group	Northeast Industrial Zone			East Mission		
	1965		1970	1965		1970
	Number	Percent	Number	Percent	Number	Percent
						Change
Agriculture, Forestry, Fisheries, and Mining	5	0.04%	66	0.7%	4	0.04%
					21	0.2%
Contract Construction	229	2.2	483	5.1	11	0.1
					860	8.2
Manufacturing	4,124	38.8	3,685	38.9	3,241	31.3
					2,675	25.5
						(566)
Transportation, Communica- tions, and Utilities	650	6.1	1,042	11.0	1,580	15.2
					1,080	10.3
Wholesale Trade	1,400	13.2	1,194	12.6	1,027	9.9
					1,080	10.3
						53
Retail Trade	618	5.8	928	9.8	797	7.7
					587	5.6
						(210)
Finance, Insurance, and Real Estate	2,453	23.1	1,089	11.5	467	4.5
						3.5
Business Services						(100)
Other	1,142	10.8	985	10.4	3,235	31.2
						36.4
						583
Total	10,621	100.0%	9,472	100.0%	10,427	99.9%*
						100.0%
						126

*Error due to rounding.

Sources: Data on employment by area and by type for 1965 were obtained from reports and printouts of the Bay Area Transportation Study Commission (predecessor to the Metropolitan Transportation Commission) derived from data furnished by the California Department of Economic Development. Data on employment by area and type for 1970 were derived by Arthur D. Little, Inc., from information contained in the U.S. Census of Population and Housing and contained in special computer runs furnished by the Metropolitan Transportation Commission.

b. Land Use Trends

Similar to the pattern in other industrial areas of the city, land reported in industrial use declined between 1961 and 1970, while land reported in utility uses increased by a slightly greater amount (Table IV-31). Except for the reduction in industrial use caused by the closing and demolition of the Regal Pale Brewery, however, industrial use was fairly stable. Public use also increased, in the Northeast Industrial Zone. Almost 30% of land in the Mission area is in industrial use, with another 9% and 4% in commercial and utility uses, respectively. There is very little vacant land, apart from the Regal Pale site, and overall vacant land declined between 1961 and 1970.

(1) Northeast Industrial Zone

Fifty-six percent of the land in this part of the Inner Mission is in industrial use, with most of the rest in commercial, utility, and public uses. Only an acre and a half was reported vacant, down 10 acres from 1961. However, there has been a recent noticeable increase in vacant buildings caused by the relocation of some small food processors and warehouse abandonment. Land in industrial use is reported to have declined only slightly but this is most likely due to improved calculations. Land in utility uses has increased significantly.

(2) East Mission

Vacant land increased in this area between 1961 and 1970 and land in industrial use declined by almost nine acres in the northern portion, again chiefly due to closing of Regal Pale and some other abandonments. In the primarily residential southern portion of the area industrial land use remained stable. Land in utility use increased, chiefly it is believed, as a result of new trucking uses.

From land use data there are no clear trends in the area. Vacant buildings are intermixed with some fairly recent construction. Generally it appears that the former manufacturing base is declining but that the area is increasingly attractive to wholesalers and business repair and business service establishments, because of lower land prices than in South of Market and because of the relatively good environment in this area. Small-scale manufacturing, involving furniture making, apparel products, and machine shops, appears to be attracted to the area when small spaces are available. Apart from any major changes, the tendency would appear to be toward the reuse of small buildings by small-scale manufacturing and wholesaling firms and of large buildings for institutional and service uses where possible. However, as specialized buildings used for food processing are abandoned, no viable reuse appears to be present.

c. Employment, Space, and Land Use Projections

Like the Potrero industrial district, the Mission industrial area is susceptible to wide ranges of employment change, projected to range from a loss of 2200 jobs by the year 2000 to a potential gain of 1650

TABLE IV-31

LAND USE TRENDS - INNER MISSION INDUSTRIAL DISTRICT

	Total Gross Acreage	Total Net Acreage	Acreage by Use							
			Residence	Commerce	Industry	Utility	Institution	Private Recreation	Public	Vacant
Northeast Industrial Zone										
1970	220.89	143.03	8.06	22.75	81.26	11.28	-	-	18.23	1.45
1961-64	217.59	145.87	9.54	18.49	82.81	5.43	2.48	-	15.61	11.51
Change	3.30	(2.84)	(1.48)	4.26	(1.55)	5.85	(2.48)	-	2.62	(10.06)
East Mission - North										
1970	316.16	211.47	81.49	10.18	45.53	12.06	3.30	0.11	52.69	6.11
1961-64	311.92	212.36	80.80	13.07	54.41	6.32	2.36	-	52.72	2.68
Change	4.24	(0.89)	0.69	(2.89)	(8.88)	5.74	0.94	0.11	(0.03)	3.43
East Mission - South										
1970	187.91	123.96	74.13	13.45	12.64	0.13	3.31	-	17.63	2.67
1961-64	187.03	122.93	73.93	14.70	11.71	-	4.09	-	17.49	1.01
Change	0.88	1.03	0.20	(1.25)	0.93	0.13	(0.78)	-	0.14	1.66
Total Inner Mission Industrial District										
1970	724.96	478.46	163.68	46.38	139.43	23.47	6.61	0.11	88.55	10.23
1961-64	716.54	481.16	164.27	46.29	148.93	11.75	8.93	-	85.82	15.17
Change	8.42	(2.70)	(0.59)	0.09	(9.50)	11.72	(2.32)	0.11	2.73	(4.94)

Sources: City of San Francisco, Department of City Planning, The Use of Land in San Francisco, October 1964; and San Francisco Land Use Tabulations for 1970, June 1973.

jobs (Table IV-32). Projected declines in food industry employment and in wholesaling would account for most of the losses; increases under the high growth projections would result from increased employment in apparel manufacturing, utilities, and services occupying office-type space, such as nonprofit organizations.

Total employment is projected to be relatively stable between now and 1985, but changes in the composition of employment are expected. A loss of 500 jobs in manufacturing and 150 in wholesaling are expected to be offset by some gains in utilities and services. By 1985 the forecast is for a small net increase in demand for office-type space (about 40,000 square feet) and for a net drop in demand for industrial space of about 460,000 sq ft on 4-5 acres of land. There is a tendency for non-industrial service businesses and institutions to occupy abandoned warehouse and general industrial space in this area, using larger quantities of space than is typical of such uses. Thus, net reduction in space use could be less than projected. However, since food processors are expected to account for most manufacturing employment losses, vacated space will probably be substantial.

The wide variance in possibilities is indicated by projected land use requirements under the high and low projections, which suggest a spread between a net surplus of 16 acres in industrial use to a need for an additional 6 acres. The primary determinants are related to the rate of potential decline in the food industry, the potential relocation of apparel manufacturing into this area from South of Market, and the rate of expansion in utilities employment.

Outside the South of Market area, the Mission industrial area has more general industrial and warehousing space available than any other area of the city, providing opportunities for a variety of uses. Therefore, it is a high-potential in-migrant area for firms displaced from the Downtown areas and firms looking for more space which do want to remain in the city.

d. Land Use Issues

Because of the likelihood of decline in manufacturing in this industrial district and the potential land which could be made available for other uses, the possibility of reuse for residential purposes has been suggested in the past and proposals have been made for actions to accomplish such a conversion. While this seems a reasonable strategy, a major redevelopment effort could force the premature closing of existing firms and cause a more rapid decline in manufacturing employment than might otherwise occur. In addition, certain types of industrial buildings in the area are susceptible to use by a variety of small manufacturing firms which appear to be attracted to the area. The area is potentially quite attractive to the apparel industry, if it continues to expand, because of the availability of relatively good transit service, older buildings in good condition, and an established presence in the area. Wholesalers may also be attracted to the area.

TABLE IV-32

PROJECTED NET CHANGES IN EMPLOYMENT, SPACE, AND LAND REQUIREMENTS
MISSION DISTRICT

	Net Change		
	<u>1973-1985</u>	<u>1973-2000</u>	
		<u>Low</u>	<u>High</u>
<u>Employment</u>			
Agriculture, Forestry, Fisheries, and Mining	-	-	-
Manufacturing	(585)	(1,920)	340
Transportation, Communications, and Utilities	82	55	650
Wholesale Trade	(143)	(790)	(340)
Retail Trade	4	(100)	30
Finance, Insurance, and Real Estate Services	-	-	-
	344	540	970
Government	-	-	-
Total Allocated by Area	(298)	(2,215)	1,650
<u>Space and Land Requirements</u>			
Industrial Space - Square Feet (000s)	(459.6)	(1,524.2)	452.4
Acres	(5.3)	(16.5)	5.8
Plant Space - Square Feet (000s)	(398.4)	(1,321.8)	520.8
Acres	(3.9)	(11.9)	7.2
Warehse. Space - Square Feet (000s)	(61.2)	(202.4)	(63.4)
Acres	(1.4)	(4.6)	(1.4)
Office Space - Square Feet (000s)	38.7	-	125.9
Acres	0.4	-	1.4
Retail Space - Square Feet (000s)	1.0	(65.0)	19.5
Acres	0.0	(0.5)	0.2
Hotel Space	-	-	-
Parking and Auto Services - Square Feet (000s)	48.0	48.0	216.0
Acres	1.1	0.6	2.8
Total Net Space - Square Feet (000s)	(371.9)	(1,541.2)	818.8
Acres	(3.8)	(16.4)	10.2

Source: Estimates by Arthur D. Little, Inc., based on projections of employment by industry. See Technical Appendix to Chapter IV for methodology.

The most serious land use problems are likely to be posed by the probable closing of major food and beverage plants which generally will have no alternative reuse. These plants occupy a substantial amount of acreage. However, as is to be expected, all of the industrial uses which may terminate within the near future are not grouped into one part of the area, so that it may be difficult to obtain a large enough area for the creation of a residential community.

Some industrial uses which may remain longer in the area, unless forced to move, are less compatible with residential use than apparel manufacturing, wholesaling, and small furniture makers, such as machinery manufacturing, concrete batching plants, and trucking. These latter two uses could potentially find available land in the Potrero or Northern Bayshore areas and would not require construction of significant amounts of structural space. Small machinery manufacturers are unlikely to build their own buildings and are therefore dependent on the availability of existing space. Expansion of apparel manufacturing in the area is dependent, as noted, on the availability of existing buildings.

It should be noted, however, that most of the projected potential demand for new industrial-type space in this area over the long term would be to accommodate utilities employment and automobile services. Neither of these activities would have to be located in this area and could as well be located in the Potrero district. Only the projected potential demand for space by the apparel industry and small furniture, paper, and chemicals manufacturing might be affected by the removal of space from industrial use.

In the Inner Mission, therefore, the city is likely to have available to it more options than in other areas. A conversion of land from industrial to other use could probably be achieved gradually without causing losses in employment. This can be achieved by removing only that kind of industrial space which is not susceptible to reuse and by ensuring the availability of appropriate space in the Potrero and Northern Bayshore areas for activities likely to remain in the city.

6. Northern Bayshore Industrial District

There are essentially six distinct industrial areas in the entire area south of Potrero Hill and east of the James Lick Freeway. In terms of functional integration and location, however, it is useful to discuss two larger areas: the northern area, bordering both sides of Army Street and Islais Creek Channel and including India Basin, and the area south of Silver Terrace and the Hunter's Point ridge on both sides of Third Street, including Candlestick Cove. Hunter's Point Naval Shipyard constitutes a wholly separate area. (See Figure IV-9.)

a. Employment Trends

The northern industrial district includes all of the area bounded by James Lick Freeway, 26th Street, and the Silver Terrace residential area, including Apparel City and the Produce Market as well as the Islais Creek and India Basin areas to the east. This large industrial area accounted

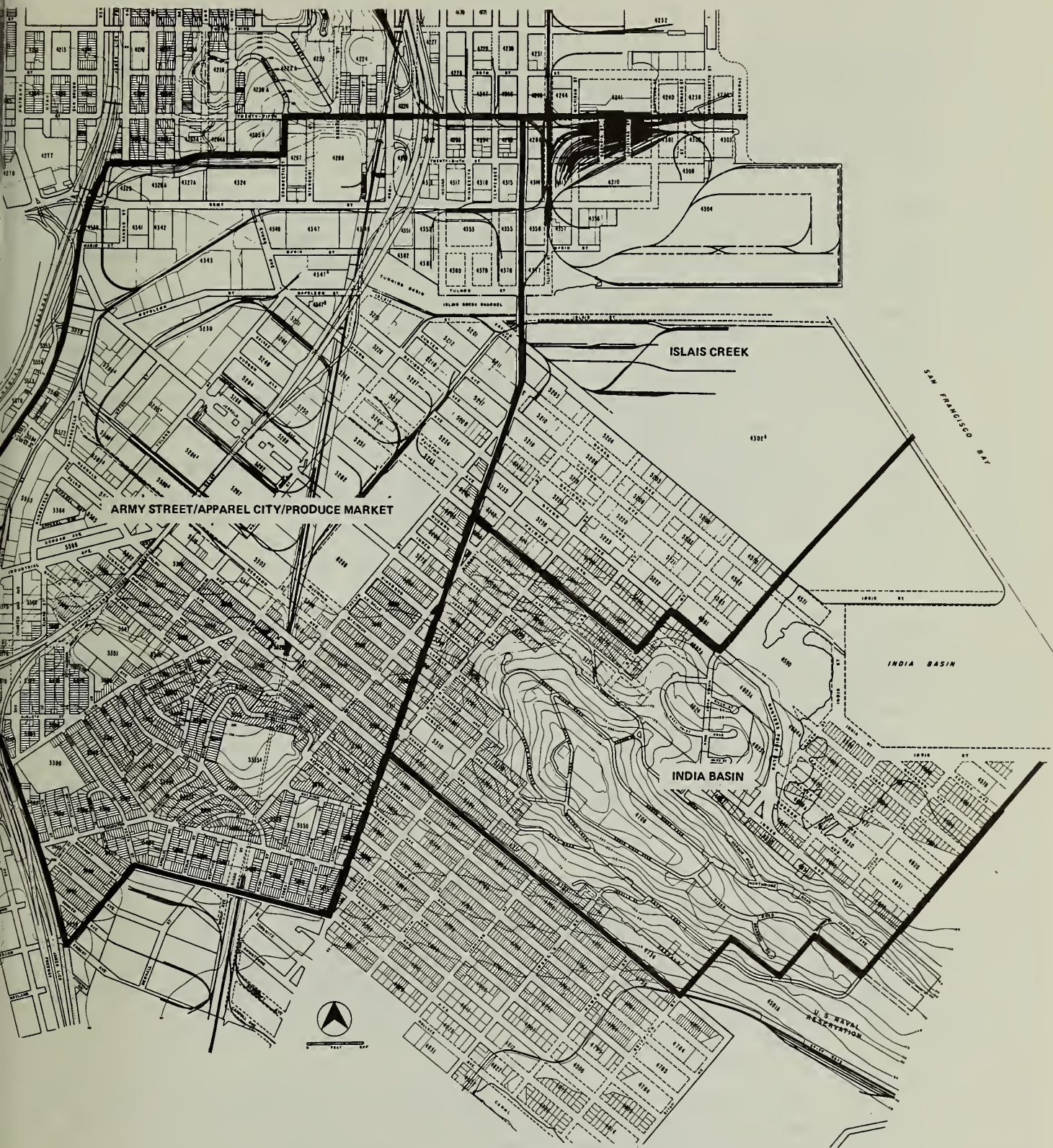


FIGURE IV-9 MAP OF NORTHERN BAYSHORE

for 15,700 jobs in 1970, an increase of almost 600 jobs over the estimated 1965 level, chiefly as a result of increased employment in contract construction (Table IV-33). That increase was due in part to construction of I-280 and in part to the location of major contractors in the area. Permanent employment actually declined by about 700 jobs due to a loss of 1900 manufacturing jobs, partly offset by increases in other categories.

Manufacturing accounted for more than 30% of total employment in 1965 and still accounts for over 20% although further declines are believed to have occurred since 1970, chiefly in the metal products industry. Fabricated metal products and food processing have traditionally been the major manufacturing activities in this area. This part of the city has been particularly affected by the declines in those sectors, chiefly through the out-migration of large firms formerly located there. Wholesale trade and TCU (especially trucking and warehousing in the non-port area) have been and continue to be major sources of employment in the area. According to available data, employment in these two sectors has actually increased since 1965, suggesting that the area has continued appeal for industrial users and, of course, reflecting the relocation of the Produce Market into the area. Retail trade employment is fairly significant in the area, a result of some large retailers in building materials.

(1) Army Street-Apparel City-Produce Market Area

This part of the district, east of Third Street and north of Silver Terrace, accounts for more than 80% of total employment in the district (Table IV-34). Manufacturing and trucking and warehousing each accounts for about 20% of employment in the area. Most of the decline in manufacturing employment occurred in the northern part of the area where the metal products industry has been dominant, resulting in a fairly depressed state along and below Army Street. Other sectors have increased employment throughout the area, according to available data, although it is known that manufacturing employment has continued to drop. Auto dismantlers have now moved west of Third Street but they do not account for much employment.

Generally, compared to other industrial areas in the city, this area appears to have continued attractiveness to industrial users and may be a receptor area for warehousemen and merchant wholesalers who seek more space than is available elsewhere. The area is also a location for increasing open storage uses, including both the auto wreckers and construction contractors.

(2) Islais Creek and India Basin Areas

A total of about 2500 jobs are estimated to have been in this area in 1970, a decline of about 200 between 1965 and 1970 (Table IV-34). Major losses occurred in employment in manufacturing, chiefly as a result of the relocation of meat packers and tanners out of the Butchertown Redevelopment Project. Employment in wholesale trade also declined by about 30%. The only significant rise in employment was in transportation activities, related

TABLE IV-33

EMPLOYMENT TRENDS - TOTAL NORTHERN BAYSHORE

<u>Industry Group</u>	<u>1965</u>		<u>1970</u>		<u>Change</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
Agriculture, Forestry, Fisheries, and Mining	10	0.1%	43	0.3%	33
Contract Construction	226	1.5	1,531	9.8	1,305
Manufacturing	5,393	35.7	3,516	22.4	(1,877)
Transportation, Communi- cations, and Utilities	1,431	9.5	2,184	13.9	753
Wholesale Trade	3,480	23.1	3,789	24.2	309
Retail Trade	1,305	8.7	1,539	9.8	234
Finance, Insurance, and Real Estate	793	5.2	964	6.2	171
Business Services					
Other	2,443	16.2	2,097	13.4	(346)
Total	15,081	100.0%	15,663	100.0%	582

Sources: Data on employment by area and by type for 1965 were obtained from reports and printouts of the Bay Area Transportation Study Commission (predecessor to the Metropolitan Transportation Commission) derived from data furnished by the California Department of Economic Development. Data on employment by area and type for 1970 were derived by Arthur D. Little, Inc., from information contained in the U.S. Census of Population and Housing and contained in special computer runs furnished by the Metropolitan Transportation Commission.

TABLE IV-34

EMPLOYMENT TRENDS - NORTHERN BAYSHORE

Industry Group	Army Street-Apparel City- Produce Market			Islais Creek			India Basin		
	1965			1965			1965		
	Number	Percent	Change	Number	Percent	Change	Number	Percent	Change
Agriculture, Forestry, Fisheries, and Mining	10	0.1%	33 0.3%	23	0	-	10	0.5%	10
Contract Construction	45	0.4	1,142 8.7	1,097	177	9.6%	321	18.8	144
Manufacturing	4,497	36.5	2,945 22.5	(1,552)	820	44.6	400	23.4	(420)
Transportation, Communica- tions, and Utilities	1,108	9.0	1,672 12.7	564	202	11.0	422	24.6	220
Wholesale Trade	2,863	23.2	3,312 25.3	449	530	28.8	379	22.1	(151)
Retail Trade	1,170	9.5	1,429 10.9	259	40	2.2	39	2.3	(1)
Finance, Insurance, and Real Estate									
Business Services	683	5.5	810 6.2	127	53	2.9	64	3.7	11
Other	1,937	15.7	1,754 13.4	(183)	18	1.0	76	4.4	58
Total	12,313	99.9%*	13,097 100.0%	784	1,840	100.1%*	1,711	99.8%*	(129)
					928	99.9%*	855	99.9%*	(73)

*Error due to rounding.

Sources: Data on employment by area and by type for 1965 were obtained from reports and printouts of the Bay Area Transportation Study Commission (predecessor to the Metropolitan Transportation Commission) derived from data furnished by the California Department of Economic Development. Data on employment by area and type for 1970 were derived by Arthur D. Little, Inc., from information contained in the U.S. Census of Population and Housing and contained in special computer runs furnished by the Metropolitan Transportation Commission.

to construction of Piers 80, 94, and 96, and a shift of port activity from the Northern and Central Waterfront areas into this area. Employment in contract construction also increased in this area, as a result of those projects.

b. Land Use Trends

Because land use trend data are not available separately for the Northern and Southern Bayshore industrial districts, changes reported by the land use surveys cannot be correlated directly with the boundaries of the Northern Bayshore district. The data shown in Table IV-35 include land use data for the Silver Terrace residential area and the Williams-Paul Avenue industrial area north of Third Street. The data do indicate, however, stability in industrial land use with total land in commercial and industrial uses reported to have increased. Some of this increase would have occurred as a result of construction of the Produce Market. There were also significant increases in utility uses and public land; a large number of acres were taken for construction of I-280 and for expansion of public works storage and salvage yards, as well as for sewage treatment plant expansion. Further expansion of the treatment plant is planned. Virtually all of the land in the northern industrial area is in industrial or industrial-type uses and less than 4% of available land was reported as vacant. There is, of course, a large amount of land in open-air industrial uses which could support more intensive development if there were any demand.

More than half the land used for industrial purposes in the Islais Creek-India Basin area has been and continues to be used chiefly for open storage and salvage yards, although the relocation of the auto wreckers has reduced the amount of such use in the area and shifted it west of Third Street. In addition, 112 acres or 35% of all the land (excluding tidelands) zoned for industrial use in the Islais Creek area was reported vacant in 1970, representing 29% of total vacant industrial land in the city. Sixty-six percent of industrial land in India Basin was reported vacant, accounting for another 16% of total vacant industrial land in the city. This area thus represents the largest source of vacant industrial land in the city.

c. Employment, Space, and Land Use Projections

This industrial area is projected to experience a loss in jobs ranging from 400-3000 by the year 2000, chiefly as a result of declines in metal products manufacturing and wholesaling (Table IV-36). The only potential sources of new industrial employment are projected to be in apparel manufacturing, electrical machinery manufacturing, and utilities. These projections do not include employment in water transportation and related marine services, which have not been allocated to specific areas. Depending on the future of the port, port-related jobs may decline substantially or increase. Under the most favorable view of water transportation employment, most of the new growth would probably occur in this area at the new port facilities. However, for the non-port-related industrial areas the most likely prospects are for a decline in employment and occupancy. Net declines in industrial space in use could range as high as 1.4 million square feet and as much as 44 acres of land. Given recent trends in

TABLE IV-35

LAND USE TRENDS - BAYSHORE DISTRICT

	Total Gross Acreage	Total Net Acreage	Acreage by Use							
			Residence	Commerce	Industry	Utility	Institution	Private Recreation	Public	Vacant
Northern Bayshore (west of Third Street)										
1970	1,014.25	723.08	153.72	40.52	281.92	86.29	13.66	-	115.41	31.56
1961-64	<u>1,021.85</u>	<u>738.92</u>	<u>164.31</u>	<u>25.96</u>	<u>288.20</u>	<u>53.69</u>	<u>13.37</u>	-	<u>91.27</u>	<u>102.12</u>
Change	(7.60)	(15.86)	(10.59)	14.56	(6.28)	32.60	0.29	-	24.14	(70.56)
Southern Bayshore (east of Third Street)										
North of Yosemite										
1970	2,038.98	1,774.46	242.89	13.18	132.87	64.99	4.06	-	641.24	675.23
1961-64	<u>1,905.79</u>	<u>1,623.53</u>	<u>258.19</u>	<u>19.19</u>	<u>120.92</u>	<u>46.62</u>	<u>3.87</u>	-	<u>571.28</u>	<u>603.46</u>
Change	133.19	150.93	(15.30)	(6.01)	11.95	18.37	0.19	-	69.96	71.77
South of Yosemite										
1970	931.25	698.42	89.50	98.70	70.46	11.24	1.62	-	86.35	340.55
1961-64	<u>1,030.55</u>	<u>779.62</u>	<u>109.73</u>	<u>4.49</u>	<u>67.55</u>	<u>9.09</u>	<u>1.58</u>	-	<u>145.47</u>	<u>441.71</u>
Change	(99.30)	(81.20)	(20.23)	94.21	2.91	2.15	0.04	-	(59.12)	(101.16)
Total Southern Bayshore										
1970	2,970.23	2,472.88	332.39	111.88	203.33	76.23	5.68	-	727.59	1,015.78
1961-64	<u>2,936.34</u>	<u>2,403.15</u>	<u>367.92</u>	<u>23.68</u>	<u>188.47</u>	<u>55.71</u>	<u>5.45</u>	-	<u>716.75</u>	<u>1,045.17</u>
Change	33.89	69.73	(35.53)	88.20	14.86	20.52	0.23	-	10.84	(29.39)
Total Bayshore District										
1970	3,984.48	3,195.80	486.11	152.40	485.25	162.52	19.34	-	843.00	1,047.34
1961-64	<u>3,958.19</u>	<u>3,138.77</u>	<u>532.23</u>	<u>49.64</u>	<u>476.67</u>	<u>109.40</u>	<u>18.82</u>	-	<u>808.02</u>	<u>1,147.29</u>
Change	26.29	53.89	(46.12)	102.76	8.58	53.12	0.52	-	34.98	(99.95)

Sources: City of San Francisco, Department of City Planning, The Use of Land in San Francisco, October 1964; and San Francisco Land Use Tabulations for 1970, June 1973.

TABLE IV-36

PROJECTED NET CHANGES IN EMPLOYMENT, SPACE, AND LAND REQUIREMENTS
NORTHERN BAYSHORE DISTRICT

	<u>Net Change</u>		
	<u>1973-1985</u>	<u>1973-2000</u>	
		<u>Low</u>	<u>High</u>
<u>Employment</u>			
Agriculture, Forestry, Fisheries, and Mining	-	-	-
Manufacturing	(430)	(1,420)	(20)
Transportation, Communications, and Utilities	(279)	(190)	190
Wholesale Trade	(237)	(1,305)	(565)
Retail Trade	-	(50)	-
Finance, Insurance, and Real Estate	-	-	-
Services	-	-	-
Government	<u>-</u>	<u>-</u>	<u>-</u>
Total Allocated by Area	(946)	(2,965)	(395)
<u>Space and Land Requirements</u>			
Industrial Space - Square Feet (000s)	(178.4)	(1,394.9)	26.1
Acres	(1.5)	(44.4)	(3.9)
Plant Space - Square Feet (000s)	(476.9)	(1,071.1)	127.5
Acres	(15.2)	(29.5)	0.8
Warehse. Space - Square Feet (000s)	298.5	(323.8)	(101.4)
Acres	13.7	(14.9)	(4.7)
Office Space - Square Feet (000s)	-	(160.6)	(57.7)
Acres	-	(3.3)	(1.2)
Retail Space - Square Feet (000s)	-	(40.0)	-
Acres	-	(2.3)	-
Hotel Space	-	-	-
Parking and Auto Services	-	-	-
Total Net Space - Square Feet (000s)	(178.4)	(1,595.5)	(31.6)
Acres	(1.5)	(50.0)	(5.1)

Source: Estimates by Arthur D. Little, Inc., based on projections of employment by industry. See Technical Appendix B.

vacation of space by the metal products industry, a considerable amount of this loss already appears to have occurred, and because much of the space is specialized in character, there is no likely candidate for its occupancy.

By 1985 it is projected that about 475,000 sq ft of industrial space on 15 acres will be vacated but that potential demand for warehouse space for wholesalers could increase by 300,000 sq ft on up to 14 acres of inexpensive land.

Some employment declines are projected to occur without any impact on space and land requirements, particularly in wholesaling and trucking and warehousing.

d. Land Use Issues

Despite the relative health of this area in terms of industrial use and employment, the seemingly inexorable decline of the metal products and food industries will almost certainly lead to losses in manufacturing employment in the area. A major issue is whether or not abandoned industrial land can be converted to meet apparent demand for warehouse space, and possibly for additional trucking facilities. Because this area is almost entirely industrial, other uses are unlikely to locate or to be successfully located in the area. Existing building space in the Apparel City area may attract some apparel manufacturers and possibly small firms in electrical machinery and furniture manufacturing, but their requirements in terms of space are not likely to be comparable to the amount of space vacated by large manufacturers. There may be increasing employment in the utilities industry, chiefly in repair and storage yards. Increasing demand for open-air uses is maintaining occupancy of land which might otherwise be vacant but appears to conflict with the environmental conditions necessary to maintenance of healthy wholesaling and warehousing activities.

The prospect of massive abandonment of large manufacturing plants, already becoming apparent along Army Street, poses serious problems of maintenance of environmental quality and appearances in the area for remaining industries. The large plants used for food processing and metal products manufacture are unlikely to be susceptible to manufacturing uses other than those for which they were constructed.

Projections for employment in the area and the general evaluation of San Francisco's attractiveness to major manufacturers also raise serious questions regarding the ability of the Redevelopment Agency to market the land in the India Basin Redevelopment Project for labor-intensive uses, as planned. The only firm demand for land in the area would appear to be in warehousing, which has a low employment density for the amount of space and land occupied. However, it may be preferable to market the land for warehouses rather than let it sit idle and it may also be more productive of revenues for the city.

The land does not appear to have any major attraction for manufacturing, other than land prices which are low by comparison with other sites in San Francisco. However, compared to prices for land available in industrial parks in the East Bay and on the Peninsula, land prices are not all that competitive. The Redevelopment Agency plans to sell land at from \$1.25 to \$2.50 per square foot. A survey of major industrial parks in Alameda County in late 1972 indicated prices ranging from 60¢ to \$1.50 per square foot, as well as a significant amount of surplus industrial land on the market (more than 10,000 acres). The experience in marketing of industrial park land on the Peninsula, particularly in South San Francisco and Burlingame, near the airport, has apparently been far more successful, but it should be noted that effective tax rates in some of the industrial parks on the Peninsula are far lower (by up to one-third) than those common in Alameda County (except Emeryville) and in San Francisco. Typically, even warehousemen are seeking lower land prices than those which would be possible in India Basin, but increased port activity at Piers 80, 94, and 96 apparently generates sufficient demand at this location. Some of the most successful industrial parks in northern San Mateo County, including the Crocker Industrial Park and the Cabot, Cabot and Forbes Industrial Park, contain space primarily used for warehouses and offices, rather than for manufacturing. With modern warehousing techniques, there is likely to be relatively little employment, except in clerical jobs.

7. Southern Bayshore Industrial District

This area contains three distinct industrial areas, as well as residential sections and the Hunter's Point Naval Shipyard. The three areas are the Williams-Paul Avenue area north of Third Street, the South Basin area south of Third and east of Candlestick Park, and the Candlestick area on both sides of Bayshore Boulevard near Candlestick Park (including industry below the Little Hollywood area). (See Figure IV-10.)

a. Employment Trends

This area represents less than half of total employment found in the Northern Bayshore district. Total employment in 1970 is estimated at almost 8000 jobs, not including Hunter's Point Naval Shipyard, after an estimated increase of almost 700 jobs since 1965, chiefly in contract construction and in manufacturing. Slightly over half of total employment in the district is in manufacturing. TCU and wholesale trade, other major sources of employment, have declined since 1965, but there has been an increase in retail trade employment (Table IV-37).

(1) Williams-Paul Avenue Area

This area had total employment in 1970 estimated at 3500, stable since 1965. The opening of a new Coca-Cola bottling plant apparently accounted for a net increase of 100 jobs in manufacturing employment. Employment in wholesale trade dropped 30% while retail trade employment apparently increased



FIGURE IV-10 MAP OF SOUTHERN BAYSHORE

TABLE IV-37

EMPLOYMENT TRENDS - TOTAL SOUTHERN BAYSHORE

<u>Industry Group</u>	<u>1965</u>		<u>1970</u>		<u>Change</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
Agriculture, Forestry, Fisheries, and Mining	75	1.0%	22	0.3%	(53)
Contract Construction	86	1.2	555	7.0	469
Manufacturing	3,277	44.8	4,196	52.6	919
Transportation, Communi- cations, and Utilities	1,055	14.4	510	6.4	(545)
Wholesale Trade	1,245	17.0	986	12.4	(259)
Retail Trade	365	5.0	699	8.8	334
Finance, Insurance, and Real Estate	437	6.0	345	4.3	(92)
Business Services					
Other	<u>772</u>	<u>10.6</u>	<u>660</u>	<u>8.3</u>	<u>(112)</u>
Total	7,312	100.0%	7,973	100.1%*	661

*Error due to rounding.

Sources: Data on employment by area and by type for 1965 were obtained from reports and printouts of the Bay Area Transportation Study Commission (predecessor to the Metropolitan Transportation Commission) derived from data furnished by the California Department of Economic Development. Data on employment by area and type for 1970 were derived by Arthur D. Little, Inc., from information contained in the U.S. Census of Population and Housing and contained in special computer runs furnished by the Metropolitan Transportation Commission.

significantly. The area appears to be stable in terms of manufacturing activity. Food, beverages, furniture, and machinery have traditionally been the major sources of manufacturing employment (Table IV-38).

(2) South Basin

This area has fared less well, with employment having declined by an estimated 200 jobs between 1965 and 1970 to a total of about 2600. The major drop occurred in manufacturing. The area has been a location for a wide variety of manufacturing activities, chiefly involving relatively small establishments. Leather goods, furniture, machinery, metal products, and machinery manufacturing have all been located in the area. An increase in employment in contract construction allocated to this area offset the statistical decline. This latter employment is probably related to the use of some of the area for contractors' open storage and salvage yards, close to Candlestick Park (Table IV-38).

(3) Candlestick Area

According to available data, employment increased, particularly in manufacturing, in this area close to the county line on the west side of U.S. 101. Schlage Lock Company has a large plant here. Some other industrial uses in the area appear stable and new construction is occurring. Declines have apparently occurred in employment in trucking and warehousing and freight forwarding, but the area appears to remain healthy. Total employment is estimated at 1900 jobs as of 1970, of which 75% were in manufacturing (Table IV-38).

b. Land Use Trends

Data on land use trends is available only for the area east of Third Street in its entirety, including the India Basin and Islais Creek areas, for two sections -- the area north and south of Yosemite. Therefore it is not possible to correlate land use changes with the economic analysis for the specific industrial areas.

Available data indicate that the amount of land in both industrial and utility uses increased between 1961 and 1970 throughout the area east of Third Street, both north and south of Yosemite (see Table IV-35). This increase was due, at least in the northern part around India Basin and Islais Creek, less to conversion of vacant land to industrial use than to the addition of net land area through bay fill to create Piers 94 and 96 and their use for shipping, warehousing, and related activities. Significant increases in public land holdings resulted from the combination of activities in the Hunter's Point Redevelopment Project, the India Basin Redevelopment Project, Candlestick Park, and port lands.

In the southern portion of the area east of Third Street, including part of the South Basin area and the Candlestick area, a net increase in industrial use occurred as a result of conversion of vacant land to industrial use near the county line west of U.S. 101. Reported increases in

EMPLOYMENT TRENDS - SOUTHERN BAYSHORE

Industry Group	Paul-Williams Area			South Basin			Candlestick									
	1965		1970	1965		1970	1965		1970							
	Number	Percent	Change	Number	Percent	Change	Number	Percent	Change							
Agriculture, Forestry, Fisheries, and Mining	0	-	14	0.4%	14		31	1.1%	8	0.3%	(23)	44	4.2%	0	-	(44)
Contract Construction	5	0.1%	122	3.5	117		56	2.0	283	10.8	227	25	2.4	150	8.0%	125
Manufacturing	1,899	55.1	2,000	57.5	101		1,168	41.4	802	30.6	(366)	210	20.1	1,394	74.4	1,184
Transportation, Communica- tions, and Utilities	385	11.2	167	4.8	(218)		234	8.3	287	11.0	53	436	41.7	56	3.0	(380)
Wholesale Trade	899	26.1	560	16.1	(339)		345	12.2	355	13.5	10	1	0.1	71	3.8	70
Retail Trade	112	3.3	445	12.8	333		245	8.7	190	7.3	(55)	8	0.8	64	3.4	56
Finance, Insurance, and Real Estate	122	3.5	108	3.1	(14)		279	9.9	228	8.7	(51)	36	3.4	9	0.5	(27)
Business Services																
Other	24	0.7	66	1.9	42		462	16.4	467	17.8	5	286	27.3	127	6.8	(159)
Total	3,446	100.0%	3,482	100.1%*	36		2,820	100.0%	2,620	100.0%	(200)	1,046	100.0%	1,871	99.9%*	825

*Error due to rounding.

Sources: Data on employment by area and by type for 1965 were obtained from reports and printouts of the Bay Area Transportation Study Commission (predecessor to the Metropolitan Transportation Commission) derived from data furnished by the California Department of Economic Development. Data on employment by area and type for 1970 were derived by Arthur D. Little, Inc., from information contained in the U.S. Census of Population and Housing and contained in special computer runs furnished by the Metropolitan Transportation Commission.

commercial land use are due almost entirely to construction of Candlestick Park and adjacent parking lots. As a result of these changes, total vacant land south of Yosemite declined by a substantial amount although total vacant open land (excluding tidelands) still amounts to 30% of total land in the area, the highest ratio in any of the industrial areas. Some of this land is residentially zoned and is relatively steep, located on the two sides of Bayview Hill. However, there were a reported 166 acres of vacant, industrially zoned land (not including tidelands) in the South Basin and Candlestick areas in 1970, or almost 52% of total land zoned for industry in the area (see Table IV-6). This vacant, industrially zoned land represented 43% of total vacant, industrial land in the city. Much of this land, however, consists of old fill, poorly engineered, and would not be susceptible to major industrial use without considerable expense. Some is now being acquired for a state park along the shoreline.

What increase in industrial use has occurred in this area has chiefly occurred as a result of plant expansions west of U.S. 101 near the county line. There is good rail access in this area. In addition, almost half of the land classified as being in industrial use, especially the land east of the freeway, is in open-air use, chiefly contractors' storage and salvage yards, rather than in manufacturing. What manufacturing uses do remain in the area are chiefly in the lumber and wood products and metal products industry although there is a scattering of other manufacturing uses. There is also a large number of wholesaling uses and a fair number of trucking and warehousing firms.

Although some of this area is potentially attractive for industrial use, the proximity of the area to South San Francisco, across the line, and the lower tax burden generally common in that city, make a location in San Francisco by manufacturing firms generally favoring the area an unlikely occurrence, especially if they must use expensive equipment subject to property taxes or employ substantial numbers of people subject to the payroll tax.

c. Employment, Space, and Land Use Projections

Long-term projections for this area suggest a decline in employment ranging from 300-1000 jobs, resulting from losses in a number of manufacturing industries: food products, metals fabrication, machinery, and electrical equipment (Table IV-39). Under the high growth projection, small increases are suggested in leather, rubber, and furniture manufacturing for this area because of the current existence of firms in those industries. The forecast for 1985 is for a decline of about 300 jobs, chiefly in manufacturing resulting in release of about 175,000 square feet of space and about 6 acres of land. Despite declining employment, however, a potential demand for warehousing space amounting to about 120,000 sq ft on up to 2 acres of land could occur by 1985. Under the long-term projections, from 4-15 acres of land now in industrial use could be vacated, involving abandonment of as little as 70,000 sq ft or as much as 700,000 sq ft. The area east of Candlestick Park appears to be the less desirable section of this area for future industrial use due to congestion on Third Street, the poor quality of the industrial environment generally, and the mixing of residential and industrial uses.

TABLE IV-39

PROJECTED NET CHANGES IN EMPLOYMENT, SPACE, AND LAND REQUIREMENTS
SOUTHERN BAYSHORE DISTRICT

	Net Changes		
	<u>1973-1985</u>	<u>1973-2000</u>	
		<u>Low</u>	<u>High</u>
<u>Employment</u>			
Agriculture, Forestry, Fisheries, and Mining	-	-	-
Manufacturing	(236)	(775)	(180)
Transportation, Communications, and Utilities	-	-	-
Wholesale Trade	(53)	(250)	(140)
Retail Trade	-	-	-
Finance, Insurance, and Real Estate	-	-	-
Services	-	-	-
Government	<u>-</u>	<u>-</u>	<u>-</u>
Total Allocated by Area	(289)	(1,025)	(320)
<u>Space and Land Requirements</u>			
Industrial Space - Square Feet (000s)	(55.6)	(716.2)	(78.3)
Acres	(6.2)	(15.1)	(3.7)
Plant Space - Square Feet (000s)	(175.0)	(574.5)	(13.9)
Acres	(8.0)	(12.9)	(3.0)
Warehse. Space - Square Feet (000s)	119.4	(141.7)	(64.4)
Acres	1.8	(2.2)	(0.7)
Office Space	-	-	-
Retail Space	-	-	-
Hotel Space	-	-	-
Parking and Auto Services	-	-	-
Total Net Space - Square Feet (000s)	(55.6)	(716.2)	(78.3)
Acres	(6.2)	(15.1)	(3.7)

Source: Estimates by Arthur D. Little, Inc., based on projections of employment by industry. See Technical Appendix to Chapter IV for methodology.

d. Land Use Issues

Demand for industrial space in the Southern Bayshore industrial district, particularly in the South Basin area, appears to be declining and there are no prospects for new sources of demand in the future except for warehousing. The area west of the freeway appears to be more stable; however, the Schlage Lock Company is the major employer in the area and can have a significant impact on employment, as well as on city revenues. It is known that employment at the plant will decline soon by about 300 people (chiefly in unskilled jobs) but closing of the plant is not likely in the near future due to a large investment in heavy equipment.

Given the prospective declines in employment and the relatively low amount of employment in much of the area, consideration could well be given to conversion of industrially zoned land now in chiefly open-air uses to some other uses -- either recreation or residential. Attraction of manufacturers to the area, given competition from industrial parks farther south in South San Francisco and Burlingame, closer to the airport, does not seem feasible within the near future. Warehousing demand could either be accommodated in portions of the area, in the Northern Bayshore industrial area, or in the Potrero district. The one advantage of this area is relatively low land prices, compared with other industrial areas, but these low land prices are most often due to the fact, as noted above, that the land is poorly filled and extra expense in foundations would probably be required to support new structures.

e. Hunter's Point Naval Shipyard

The Department of City Planning has very recently received a thorough study of potential reuse options for the Hunter's Point Naval Shipyard. It appears now that reactivation of the shipyard in shipbuilding and repair uses will depend chiefly on the marketing effort and the health of the shipbuilding industry. This facility was formerly the single largest employer in the Southern Bayshore area and its closing eliminated 6000-7000 jobs. Although reactivation of the shipyard could potentially have some secondary impact outside its own area in generating new employment, the impact is likely to be minimal since so much can be provided for within the shipyard area itself.

V. THE DESIRABILITY AND FEASIBILITY OF PUBLIC INTERVENTION
TO ALTER EMPLOYMENT TRENDS -
EVALUATION AND RECOMMENDATIONS

A. INTRODUCTION

Chapters II, III, and IV presented an analysis of the city's economic structure and projected trends in employment and land use. The present chapter is concerned with the evaluation of public actions to affect trends which may be considered undesirable or problematical in terms of broad economic or environmental objectives. Evaluation of policy options to alter projected trends includes two interrelated elements: one concerning the social desirability of intervention, and the second concerning its feasibility -- i.e., the likely effectiveness of alternative city policies and programs in achieving desired changes in the level or composition of employment.

This study has been concerned in large measure with the decline of the "industrial" sectors of San Francisco's economy -- manufacturing, wholesale trade, and selected transportation industries. Although economic growth may pose problems which are as great as those posed by economic decline, the problems are quite different and it is generally assumed that economic decline will be detrimental to resident job opportunities. Therefore this chapter focuses on what might be done and should be done to arrest the decline or encourage the growth of those sectors which have been declining and are projected to decline in the future. Some attention is also given to issues posed by the growth of certain sectors in the economy; however, that subject is addressed in more detail in the next chapter since many of the issues raised by economic growth in the city are related to the management of San Francisco's land use patterns and physical environment.

Section B includes a brief summary of problem and potential industries based on the analysis presented in Chapter II. Section C deals with the potential impacts associated with these industries and the social desirability of trend alteration. Section D presents an analysis of public policies and programs available or potentially available to the city in dealing with the negative impacts of the projected trends, and Section E deals with the probable impacts, and desirability, of public intervention.

B. PROBLEM AND POTENTIAL INDUSTRIES

The two sectors in which significant employment declines are expected are manufacturing and wholesale trade. Manufacturing employment might decline by as many as 11,000 jobs by 1985 and an additional 4000 by the year 2000 under the low employment projections. Wholesale trade might decline by 9000 jobs by 1985 and by a total of about 11,500 by the end of

the century under the same scenario (Table II-15). The high projections show a much smaller rate of decline, with a possibility of an overall gain in manufacturing of about 2000 jobs by 1985. The low and high projections represent scenarios which do not have equal probabilities. In manufacturing the low projections represent a much more probable scenario than that represented by the high projections.

Though an overall decline in the manufacturing and wholesale trade sectors is practically inevitable, their rate of decline depends on a variety of factors as discussed in Chapter II. Some of these factors are susceptible, to some degree, to public intervention while others are not. The relative importance of the various determining factors differs from industry to industry and from firm to firm, thus affecting the responsiveness to public policy tools to a different degree in each activity. Our analysis shows that manufacturing industries can be divided into three major categories according to their future potential and competitive position in the city. The first category includes "irreversible decline industries" such as food, fabricated metal products, and machinery industries. The second category includes small industries with potential which might be stimulated. In the third category are those industries with an uncertain future: this category includes most manufacturing in the city.

1. Irreversible Decline Industries

These are the industries which are expected to decline even under the high projections. The largest industry in this category is the food industry, in which employment will probably decline from 1500-2500 jobs during the next 25 years. The second largest industry in this category is fabricated metal products, in which an employment decline of 500-2000 jobs is expected by the year 2000. Employment in electrical and nonelectrical machinery combined will probably decline from 1200-2200 jobs during the period.

The almost certain decline in these industries basically limits the city to programs designed to slow the rate of decline rather than to prevent any decline or induce overall growth. This is not meant to imply that no expansion is possible in any of the companies or activities in these industry groups. The conclusion only refers to the overall level of economic activities in these industries. Small establishments and even a few larger ones might actually expand. The degree to which that occurs will be one of the factors determining the rate of decline.

2. Small but Growing Industries

The growing industries are those which are expected to grow even under the low projection scenario. Our analysis shows only two such industry groups: rubber and plastic products and instruments and related products. Both of these industries are small, together accounting for only about 750 jobs in 1973. Though employment gains in these industries are probable, these gains are projected to be quite modest in absolute numbers, ranging from 400-650 new jobs by 2000.

3. Uncertain Future Industries

These are all of the manufacturing industries not included in the above categories. They are industries for which the low projections show a decline while the high projections show employment gains. In 1973, industries in this category accounted for more than 60% of manufacturing employment, excluding administrative and auxiliary activities. The high share of manufacturing employment in these industries, which show no clear trends, is a major reason for the wide range between our high and low projections of manufacturing employment.

The future of the industries in this category depends on a variety of factors, such as population shifts, technological developments, wage levels, rents, and taxes.* Few of these factors are susceptible to public manipulation (see Section D below). The category includes the two largest manufacturing industries in San Francisco: apparel and printing and publishing. The range between high and low projections for 2000 is 2500 jobs (8000-10,500) for the apparel industry, and 1000 jobs (9500-10,500) for printing and publishing. The average projections are virtually identical with the industries' 1973 employment levels. The combined employment of these two industries accounted for 44% of total actual manufacturing jobs in 1973. That share is expected to increase, according to the average projections, to 47.5% in 1985 and to 50% in 2000, because of the decline of other manufacturing activities. The future of these industries in San Francisco is, therefore, of primary importance in terms of the level of future employment in manufacturing.

The wide range between the low and high projections in the apparel industry represents both a potential problem and a potential opportunity. The range results primarily from the nature of the factors determining the level of activity in the industry, rather than from deficiencies in data. The high and low projections do not themselves represent extreme values. Due to the nature of the industry (see Chapter II-C-1) it is quite possible that actual future employment will either exceed the high projection or fall significantly short of the low projection. While the city has objective advantages to particular segments of the apparel industry, as discussed in Chapter II, employment levels are subject to rapid changes due to the highly competitive character of the industry nationally, the dependence of establishments on the talents and skills of a few designers and managers, and the lack of large fixed capital investments -- all of which contribute both to locational instability and annual variations in levels of activity in any city. In addition, establishments in the city are

*For a detailed discussion of these factors and their effects on the various industries see Chapter II.

dependent on the availability of certain kinds of space and access to a relatively low-cost labor force in order to compete in national markets and have a viable existence in the city. Significant changes in these factors -- such as a dramatic and sudden increase in the costs of doing business or a loss of successful designers -- could easily cause major changes in employment levels.

The significantly narrower projection range of the printing and publishing industry is based on the relative stability of the purely economic factors determining the level of activities in that sector. It should be emphasized that out-migration of a few large establishments might reduce employment, at any given time, significantly below our low projections. In the long run, however, it is likely that the declining supply of goods and services resulting from such out-migration will stimulate the growth and expansion of smaller establishments, thus replacing, at least partially, the decline in employment due to loss of specific firms.

The low and high projections for the industry should therefore be viewed as long-term ranges of likely employment in the industry based on purely economic considerations. As stated in Chapter II, firms in the industry are concerned about prevailing wage rates, labor relations, and tax rates. Though good labor relations per se are usually only a relatively minor positive locational determinant, poor labor relations are quite a significant negative determinant. Labor problems and taxes are of major concern when the general decline in the competitive advantage of San Francisco as a location for large establishments is considered. Any future deterioration in labor relations and any other factor which is detrimental to the general "business climate" in the industry might result in significant employment losses which are not justified by the objective economic structure of the city.

C. POTENTIAL IMPACT CHARACTERISTICS OF TARGET INDUSTRIES AND THE DESIRABILITY OF TREND ALTERATION

The projected changes in the economic structure of the San Francisco economy will affect the city and its residents both directly and indirectly by affecting employment opportunities and other factors. Estimates of the probable likely impacts of the projected changes are of crucial importance to the policy maker because of (1) the need to evaluate the desirability and feasibility of public action to alter expected trends in order to achieve the city's objectives, and (2) the need to plan for the future in order to accommodate expected growth and minimize unavoidable negative impacts.*

*The term "unavoidable" includes, here, those impacts which can be avoided only through policies whose costs exceed their benefits to the city.

It is useful to distinguish between two distinct concepts regarding the desirability of public action to alter trends in the economy. The concepts are used in reference to both the impacts of trend alteration and the nature of policy tools used to effect a change. The desirability of trend alteration depends on the benefits which might result from such action. These benefits are in turn related to the negative impacts of such trends: the greater the negative impacts the greater the potential benefits of avoiding them and hence the greater is the desirability of trend alteration. Used in that context the desirability concept is limited to evaluation of the benefits gained from intervention. The desirability of using specific policy tools, on the other hand, in order to effect beneficial changes, depends on cost considerations as well as benefits. Desirability in this context is determined by the relationship between the monetary and non-monetary costs of public actions required to effect benefits and the value of those benefits.

In order to determine the desirability of trend alteration, it is necessary to estimate the major employment and income effects of the projected trends on city residents, as well as major fiscal impacts on the city. The magnitude of these impacts can serve as an estimate of the potential benefits of action to change these trends. A large negative impact indicates a potentially great benefit from preventing its occurrence. In such a case the question then becomes one of analyzing the feasibility and desirability of using alternative policy options. If the negative impact is relatively small, it is probable that the benefits of eliminating such an impact are small and therefore only limited-cost actions should be considered. The magnitude of negative impacts generated by projected changes in problem industries thus limits the range of policy options to be considered to those where costs do not exceed benefits.

1. Estimated Impacts of Declines in Manufacturing and Wholesale Trade Employment on Resident Employment Opportunities

The employment impact analysis that follows is based on the general framework presented in Chapter II-E for the estimation and evaluation of overall employment impacts of projected changes. Since not all jobs in the city are held by city residents, and residents hold more jobs in certain occupational categories than others, the impact of projected changes in employment in manufacturing and wholesale trade will affect residents and nonresidents differently. The focus here is on estimating impacts on resident employment and job opportunities.

- a. Job Availability Impacts - Manufacturing

Table V-1 shows estimated and projected wage and salary employment in the manufacturing sector in San Francisco by major occupation groups. The difference between the existing (1973 estimates) and projected future jobs (Table V-2) represents the impact of projected changes in total manufacturing employment on jobs available (by occupational category) to both residents and nonresidents. The magnitude of changes in available jobs in specific occupations varies according to the high and low projections. The high

TABLE V-1
EMPLOYMENT BY OCCUPATION IN MANUFACTURING IN SAN FRANCISCO - 1973, 1985, AND 2000

<u>Occupation</u>	<u>1973</u>	<u>1985</u>			<u>2000</u>		
		<u>Average</u>	<u>Low</u>	<u>High</u>	<u>Average</u>	<u>Low</u>	<u>High</u>
Total	54,032	49,500	43,000	56,000	46,450	39,200	53,700
Professional, Technical, and Kindred Workers	4,908	5,228	4,551	5,905	5,225	4,441	6,008
Managers and Administrators	5,155	4,902	4,327	5,476	4,618	3,980	5,257
Sales Workers	4,495	3,241	2,838	3,645	2,650	2,237	3,062
Clerical and Kindred Workers	11,354	10,504	9,264	11,743	9,675	8,337	11,012
Craftsmen and Kindred Workers	9,051	8,136	6,749	9,523	7,706	6,198	9,214
Operatives	16,704	15,656	13,728	17,585	14,925	12,575	17,276
Laborers	1,352	1,037	906	1,169	878	752	1,004
Service Workers	1,013	796	637	954	773	680	866

Source: Arthur D. Little, Inc., estimates.

TABLE V-2

JOB AVAILABILITY IMPACTS BY MAJOR OCCUPATION GROUPS IN MANUFACTURING*

Occupation	1985 Impacts (1985 projections minus 1973 employment estimates)			2000 Impacts (2000 projections minus 1973 employment estimates)		
	Average Employment Scenario	Low Employment Scenario	High Employment Scenario	Average Employment Scenario	Low Employment Scenario	High Employment Scenario
Total	-4,532	-11,032	1,968	-7,582	-14,832	-332
Professional, Technical, and Kindred Workers	320	-357	997	317	-467	1,100
Managers and Administrators	-253	-828	321	-537	-1,175	102
Sales Workers	-1,254	-1,657	-850	-1,845	-2,258	-1,433
Clerical and Kindred Workers	-850	-2,090	389	-1,679	-3,017	-342
Craftsmen and Kindred Workers	-915	-2,302	472	-1,345	-2,853	163
Operatives	-1,048	-2,976	881	-1,779	-4,129	572
Laborers	-315	-446	-183	-474	-600	-348
Service Workers	-217	-376	-59	-240	-333	-147

*Based on the differences between the 1985 and 2000 projections and estimated 1973 employment presented in Table V-1.

Source: Arthur D. Little, Inc., estimates.

projections show a much smaller adverse impact on job availability than the low projections. In fact, the high projections show an actual increase in the number of jobs available in some of the most critical occupational groups -- namely, craftsmen and operatives.

Since the low employment projections in Table V-2 show a lower number of jobs in each occupation group than the high projections, the impact (i.e., loss of jobs) of the low projections will be greater than that of the high projections. Under the average projection, the total number of jobs in manufacturing will be 4532 less in 1985 than in 1973, with an additional decline of 3050 jobs by 2000. The lower projections show a much greater decline in available jobs: 11,032 by 1985 and an additional 3800 by the year 2000.

These impacts will be felt by both city residents and nonresidents since both groups hold the kinds of jobs which will be eliminated. In order to estimate the impacts on jobs available to city residents, it is necessary to estimate the proportion of jobs held by both groups in different occupational categories. According to 1970 journey-to-work data, 51.1% of all manufacturing jobs were held by city residents (see Table II-26). Our estimates of commuting, discussed in Chapter II, indicate that this percentage probably overestimates the actual resident employment in manufacturing in 1970. The continued decline in city population* and long-term trends in the city's population mix have probably reduced this share since 1970. The actual percentage of manufacturing jobs, by occupation group, which will be held by San Francisco residents in 1985 and 2000 depends on future trends in city population and its occupational composition.

Table V-3 presents our estimates of changes in the number of jobs held by or available to San Francisco residents in manufacturing as a result of overall declines in employment in that sector. The "high" impact estimates were derived by applying 1970 journey-to-work shares** to the average employment projections in Table V-2. They are based on the assumption that future population trends will show an increase in city population and a reversal of existing trends in the labor force composition of city residents. This assumption increases significantly the impact on the occupational groups which are of greatest concern -- namely, craftsmen, operatives, and laborers. The "high" impact on these occupation groups can alternatively be considered as representing the impact of a slightly

*According to U.S. Department of Commerce estimates the city's population declined by 3.8% between April 1, 1970, (Census) and July 1, 1973, (see Current Population Reports of the U.S. Department of Commerce series P-25, No. 532, issued October 1974).

**The Census journey-to-work data provide a breakdown of employment by place of residence by industry group and by occupation. They do not provide a cross-tabulation of employment by industry and by occupation, by residence. The 1970 shares are therefore based on ADL's estimates of such a cross-tabulation, with adjustments which exclude employees in the apparel industry (which is not projected to decline under the average projection). According to these estimates city residents held about 70% of all service jobs in manufacturing in 1970, 60% of the clerical and laborers jobs, 50% of the professional, sales, and operative jobs, and 40% of the managerial and craftsmen jobs.

TABLE V-3

JOB AVAILABILITY IMPACTS ON SAN FRANCISCO RESIDENTS
BY MAJOR OCCUPATION GROUPS IN MANUFACTURING

Occupation	1985 Impacts (change in the number of jobs held by San Francisco residents from 1973 to 1985)		2000 Impacts (change in the number of jobs held by San Francisco residents from 1973 to 2000)	
	<u>Low*</u>	<u>High*</u>	<u>Low*</u>	<u>High*</u>
Total	-2,024	-2,330	-3,134	-3,866
Professional, Technical, and Kindred Workers	173	160	184	159
Managers and Administrators	-109	-101	-247	-215
Sales Workers	-533	-617	-664	-923
Clerical and Kindred Workers	-544	-510	-1,150	-1,007
Craftsmen and Kindred Workers	-288	-346	-336	-538
Operatives	-419	-514	-569	-890
Laborers	-151	-250	-182	-284
Service Workers	-152 -153	-153 -152	-168 -170	-170 -168

*The "low" impact is based on projected 1985 and 2000 city residents' shares in each occupation group, while the "high" impact is based on estimated 1970 shares.

Source: Arthur D. Little, Inc., estimates.

lower-than-average employment projections assuming no trend reversal in the city's labor force. In other words, a similar impact results from assuming a greater-than-average decline in manufacturing combined with a continuing decline in the city's "blue-collar" labor force.

The "low" impact estimates are based on the assumption that continuing decline in the resident labor force will reduce the share of manufacturing jobs held by city residents independent of projected declines in employment. Each estimate is based on the average employment projections. According to these projections, the number of city residents in the sales, craftsmen, operatives, and laborers categories is expected to decline, though at a lower rate than during the 1960-1970 period (see Table II-28). We assumed a 15% decline in the sales category in each 15-year period (1970-1985 and 1985-2000) compared with an actual decline of 16.9% during the 10 years between 1960 and 1970. The projected decline in each period for craftsmen was estimated at 21% (24.4% between 1960 and 1970). The corresponding rate for operatives and laborers is 20% (21.2% and 23%, respectively, from 1960-1970). Based on the same source (Table II-28) we have projected an 8% increase in the professional and managerial categories, a 7% increase in the clerical category, and an 0.8% increase in the service category. As a result of the projected increases in these latter categories, the "low" impact in these occupation groups is greater (in absolute values) than the "high" impact.

As shown in Table V-3, an estimated 2024-2330 manufacturing jobs held by city residents will be eliminated by 1985; by the year 2000 the number will increase to 3134-3866. The largest decline in jobs available to city residents will be in the clerical category (between 1007 and 1150 jobs by 2000); in the sales category, 664-923 jobs will be lost.

About half the decline in clerical jobs is due to projected declines in administrative and auxiliary activities rather than actual manufacturing activities. Administrative and auxiliary activities will also account for 20-25% of the decline in sales jobs.

For craftsmen, the number of jobs will decline from 336-538 by the year 2000; from 569-890 operatives' jobs will be lost. These two categories combined account for 28.9% of the total "low" impact and for 36.9% of the total "high" impact in 2000. These shares (especially the "low" impact share) are considerably lower than the 41.2% share of the same categories in Table V-2 which covered both nonresidents and city residents.

The small share of these categories for city residents alone is due primarily to the lower-than-average share of craftsmen jobs held by city residents. The "low" impact shows a much lower share for the craftsmen and operative categories than the "high" impact since under the "low" projections it is assumed that the percentage of craftsmen and operatives living in the city will continue to decline during the next 25 years.

b. The Evaluation of Impacts on City Residents' Employment - Manufacturing

Table V-3 presented the job availability impacts on city residents which are expected to occur during the next 25 years. In order to estimate the net employment impacts we have to evaluate the effects of job availabilities in manufacturing on actual residents' employment opportunities.*

The largest decline in manufacturing jobs held by city residents is expected to occur in the clerical category. The elimination of 1007-1150 clerical jobs held by city residents is not expected to have any significant impact on city residents due to the significant overall projected increases in clerical jobs available in the city (see Table II-22).

The second largest decline in jobs held by city residents is expected to be in the sales category. The number of sales jobs available depends on the employment projections (Table II-22). According to the average projections the number of sales jobs will decrease slightly by 1985 and then increase during the 1985-2000 period, both changes attributable to long-term trends in occupational mix (Table II-24).

About 32% of the expected decline in residents' sales jobs in the manufacturing sector will be caused by occupational mix changes rather than employment declines in the sector per se. It is expected that many of the residents in these categories whose jobs will be eliminated will either out-migrate regardless of what happens or, what is more likely, be absorbed in other categories, especially in clerical work. Past trends (Table II-28) indicate that this is what probably occurred between 1960 and 1970. The magnitude of employment impact generated by the manufacturing decline is therefore only a fraction of that indicated by Table V-3. Trend alteration will have a limited desirable effect, which should be considered a by-product rather than a reason for public intervention.

The other white-collar category which is expected to show a decline is the managers category. The decline from 215-247 jobs held by city residents will have only a very minor impact on residents since the overall number of jobs available in the category will increase significantly by the end of the century.

The number of jobs held by city residents in the professional category is expected to increase in spite of the sector's decline, as a result of technological changes. Since mobility within the category is limited, some residents whose jobs are eliminated probably will have difficulty making the transition. This, however, is a general problem, not limited to the decline of the manufacturing sector. Such problems should be treated as either special cases or general social problems rather than as considerations for overall trend alteration.

*For a more general discussion of the determinants of employment impacts see Chapter II-E.

Of the four remaining occupational categories (craftsmen, operatives, laborers, and service) only the service people are expected to have no difficulty finding other jobs. The decline of manufacturing is expected to cause a loss of only about 170 jobs and workers in the category should be able to find similar jobs in other sectors (Table II-22).

The only significant employment impacts of the projected declines in manufacturing activities will be felt by craftsmen and operatives. Only a minor impact is expected in the laborers category though approximately 300 city laborers may lose their manufacturing jobs by the year 2000. More than 70% will lose their jobs due to expected changes in the occupational mix; only about 75 jobs will be lost from the decline in manufacturing.

The overall declining demand for laborers is a general long-term phenomenon and should be treated as such. The number of jobs in this category in San Francisco declined from 18,000 to 16,900 between 1960 and 1970. All of the decline was due to mix changes (Table II-23); without this change (i.e., the declining demand not due to changes in overall employment), the number of laborers in 1970 would have been 19,700 instead of the actual 16,900. This trend of adverse occupational mix impact is expected to continue in the future, reducing the number of jobs available for laborers to 12,200-14,800 by the end of the century. Table II-28 shows the effects of this trend on the unemployment rate of city laborers: the rate is much higher than that of any other occupational group. Though a trend alteration will have the desirable effect of saving about 75 laborers jobs for city residents, the impact is too minor to justify any general public policy designed to alter the projected trends.

The number of craftsmen jobs available to city residents is expected to decline by 336-538 by the year 2000. This decline results not from changes in the occupational mix but rather from the drop in manufacturing activities. If the decline is halted, the potential number of jobs available to city residents will be between 350 and 560 due to a slight increase in the occupational share of craftsmen in manufacturing.

The estimate of 350-560 jobs does not necessarily mean that the projected overall decline in manufacturing will increase unemployment of city craftsmen by that range by the year 2000. Though the total number of jobs available in the city for craftsmen is expected to decline very slightly under the average employment projections (Table II-22), the continued retirement and out-migration of craftsmen (Table II-28) might lower the impact considerably. In other words, 350-560 is a range based on existing and projected average shares of city residents in this category: it is not necessarily a range representing actual employment impact on city residents.

The lack of a clear correlation between the number of jobs available and the unemployment rates in specific occupations (see Chapter II-E) contributes to the problems of estimating the actual employment impact of

the projected decline in manufacturing. In the absence of any other measure we estimate a net employment loss of about 425 craftsmen jobs for city residents by the year 2000. Any refinement of this estimate will require considerable additional research which could not be undertaken in the present study.

Following the same procedure for the operatives category, we estimate a net loss of about 775 operative jobs for city residents from 1973-2000. It should be reemphasized that this does not mean long-term unemployment of 425 city craftsmen and 775 city operatives but rather that 425 craftsmen and 775 operatives will either have to look for jobs elsewhere, change occupation, compete more vigorously with nonresidents who hold most available jobs in these categories, or be unemployed.

Ignoring any other considerations, the fairly large number of city craftsmen (425) and operatives (775) likely to be adversely affected indicates significant benefits from public policies which might eliminate these adverse employment impacts. Considering these benefits alone (i.e., ignoring the costs of intervention) trend alteration policies are desirable. The desirability of specific policy options, however, will depend on the social costs associated with their application as well as with their potential benefits. An evaluation of such policies will be presented in Section E below.

The employment impacts discussed above were based on the average employment projections. The impacts will be considerably greater under the low projections. Excluding the apparel industry, the low projections will generate employment impacts which are about 60% higher than those estimated for operatives, 110% higher than those estimated for craftsmen, and 100% higher than those estimated for laborers. In other words, under the low projections, for all industries (excluding apparel) about 900 craftsmen, 1250 operatives, and 150 laborers -- all city residents -- will probably lose their jobs by the year 2000 as result of projected declines in manufacturing.

The apparel industry merits special consideration. Its uniqueness is due to the overwhelming percentage of city residents employed in the industry who will have great difficulty in finding other jobs. These include operatives who accounted for about 65% of total apparel employment in 1970; this share is expected to decline to 61% in 2000. An estimated 80-95% of operatives jobs are held by city residents. Thus a decline of, say, 1000 jobs in this industry will have a much greater employment impact on city residents than a similar decline in any other industry.

Under the low projections, employment in the apparel industry will decline by about 1400 jobs by the year 2000, resulting in a loss, for city residents, of about 750 operatives jobs, 120 craftsmen's, and 30 laborers' jobs. Further, some of the clerical positions in the industry are also held by persons who could not readily find alternative jobs in the city. Employment considerations therefore indicate a high degree of public

interest in the future of the industry. However, low wages and the inherent locational instability of the industry (see Chapter II-C) limit the desirability of public intervention.

Indirect Impacts

The preceding discussion concerned only the direct effects of the decline of manufacturing on employment opportunity in San Francisco, and not the indirect employment effects on other economic sectors. It is generally assumed that an increase in employment in a given activity generates additional employment in other activities -- through increased demand for capital equipment, materials, business services, etc., and through increased spending on the part of the additional employees.

The initial employment increase might therefore have a multiplier effect on the entire economy. On the other hand, an initial employment decline is usually expected to generate additional declines through a similar process, thus producing a negative multiplier effect. The magnitude of the employment multiplier depends on several key factors such as the industrial linkages, the size of the economy, the type of jobs created and their wage levels, and the existing level of unemployment which might be affected by changes in the demand for goods and services.

Taking all of these factors into consideration we believe that the only significant multiplier effect to be expected is that associated with existing industrial linkages. As a result of these linkages the decline in manufacturing is likely to have a limited impact on wholesale trade and port activities.

Though the decline in employment will reduce total spending of manufacturing employees in the city, the resulting indirect employment impact on city residents will be minor if the decline occurs gradually over time. There are two reasons for this. First, the total reduction in employee expenditures will be much smaller than the expected decline in disposable income received by manufacturing employees since (a) most manufacturing employees' income is received by nonresidents who spend only a fraction of that income in the city, and (b) most city residents losing their jobs will find other jobs in the city.

Second, overall employment in the city is expected to increase at a significantly higher rate than the city's labor force which might actually continue to decline, thus offsetting the multiplier effects of the projected decline in manufacturing employees' expenditures.* Though long-term

*The analysis applies to long-term trends rather than cyclical conditions. The impact of a decline occurring during a recession might obviously be significantly greater.

multiplier effects are expected to be quite limited if not negligible, the short-run effects might be significant. The out-migration of several large establishments from the same area will, for example, have a considerable impact on ancillary activities in the neighborhood. Such impacts depend, however, more on area relocation and growth than on the overall decline in manufacturing. In these cases, the impact will be on land use rather than on employment.

c. Impacts on Resident Employment and Job Opportunities Due to Wholesale Trade Declines

Total employment in wholesale trade is projected to drop by an average of 5300 jobs by 1985 and by an additional 2700 jobs by 2000. Most of the decline will occur in the white-collar categories with the managers, sales, and clerical categories accounting for 80% of the jobs lost by 1985 and 83% of total jobs lost by 2000. The overwhelming share of white-collar jobs is due, to a large degree, to long-term changes in the occupational composition of wholesale trade employees.

The number of jobs available for sales workers is expected to decline by 2100 by 1985 and by a total of 3200 by 2000. Only 40% of the decline is due to overall sectorial decline, while 60% of the decline would occur even if total employment were stabilized at the 1973 level. Based on our commutation estimates* the sector's decline will be responsible for the elimination of about 450 sales jobs held by city residents by 1985 and another 100 jobs by 2000 (about 840 additional residents will lose their jobs by 2000 due to changes in occupational mix).

As explained in the preceding subsection, the impact of job losses in this category will depend on several factors, the most important being the occupational mobility of workers in the category. Due to expanding opportunities in other white-collar categories the employment impact of the overall decline in the sector is probably significantly lower than 450.

The decline in wholesale trade will reduce the number of clerical jobs by 1560 by 2000. The effect on the potential number of jobs available is significantly higher since the share of clerical employees is increasing steadily. If the sector were to stabilize at the 1973 employment level there would be about 2400 more jobs available in 2000 than under the

*These estimates are the averages of (1) the 1970 commutation patterns and (2) projected patterns for 1985 and 2000 based on "adjusted" 1960-1970 trends. The 1970 estimate is similar to the manufacturing sector estimates derived from the journey-to-work data. These estimates are quite different from those for the combined wholesale and retail sectors (in Table II-26) since average wholesale wages (\$11,700 in 1973) are much higher than those in the retail sector (\$6,785 in 1973), indicating a much higher share of in-commuters in wholesale trade than in retail trade.

average projections. However, growth in the other sectors in San Francisco will provide jobs to virtually all resident employees in the category. Preventing the decline of the sector will merely generate more jobs for nonresidents.

The actual decline in craftsmen will be very minor, 35 jobs by 2000. If the decline in wholesale trade is halted, mix shifts would generate 770 additional jobs by 2000. According to the projected average share of city employees this could mean about 250 jobs for residents. However, it is doubtful that the average share can be applied to new jobs because of the continued out-migration of persons in this category. In other words, though a decline of 100 jobs reduces the number of residents' jobs by an average of 32, an increase of 100 jobs might increase the number of such jobs by only 10 or less. We estimate the employment impact to reduce the number of city craftsmen jobs by 50 by 2000.

The number of operatives in wholesale trade will decline by about 700 by 1985 and by an additional 300 jobs by 2000. The impact on city residents will be the elimination of 300 jobs by 1985 and another 100 jobs by 2000.

The number of laborers will decline by about 450 by 1985 and by 730 for the entire 1973-2000 period, the decline resulting mainly from changes in occupational composition rather than sectorial activities. The impact on city laborers is limited to 180 jobs by 1985 and 60 additional jobs by 2000.

The principal benefit of halting the projected decline in wholesaling employment will be to prevent the loss of about 700 blue-collar jobs and 450 sales jobs that will not be replaced by expected growth in other sectors by the year 2000.

2. Income Impacts

The projected decline in manufacturing and wholesaling employment will affect city residents' income through (a) the net employment impact, i.e., loss of jobs held by city residents which is not offset by growing employment opportunities elsewhere, (b) income differentials between the lost jobs and the new jobs obtained in the growing sectors, (c) loss of income to proprietors of establishments serving employees in these sectors, and (d) loss of income to proprietors of wholesale and manufacturing establishments who suffer declines in business.

Table V-4 shows that based on estimated 1973 wages the annual loss in disposable income due to the employment impact will range between 10-12 million 1973 dollars in the year 2000 for manufacturing and between 6-7 million 1973 dollars in wholesaling.

In order to put these values in the right perspective, it is useful to compare the effects of the projected manufacturing decline with those which would have been generated by a hypothetical decline in the white collar sectors (FIRE, Services, etc.). The average projections in the manufacturing sector show the loss of about 7600 jobs by 2000 (Table V-2). An average of about 3500 of these jobs are expected to have been held by San Francisco residents in the year 2000 (Table V-3). These 3500 jobs represent an annual disposable income of between 24-28 million 1973 dollars.* If on the other hand the 7600 job loss would have occurred in FIRE, for example, the average estimated number of jobs lost by San Francisco residents would have been 4700 representing an estimated annual disposable income of between 28-32 million 1973 dollars. The employment effect of such a loss, if not offset by growth in other similar jobs, would have been significantly higher than that caused by the decline of manufacturing. This is because of the higher shares of San Francisco residents in the FIRE sector compared with their share in manufacturing employment. (See Table II-26.) The income effect associated with an equal total employment decline of 7600 jobs would also be higher if the decline were to occur in FIRE rather than manufacturing in spite of the lower average wage in the former.

The second income effect is that associated with existing wage and salary differentials for similar type jobs in the various sectors. Though most residents losing their jobs in manufacturing and wholesaling are expected to find other jobs in the city, their new jobs are likely to pay less. The loss due to sectoral wage and salary differentials is estimated to range between 1.2-1.8 million 1973 dollars in the year 2000 for manufacturing and between 1.8-2.4 million 1973 dollars in wholesaling.

The third income effect is that associated with the loss of net revenues to proprietors of establishments selling goods and services to employees in manufacturing and wholesaling. This effect is due to

*The net income impact is significantly smaller since most employees are expected to find other jobs.

TABLE V-4

NET DISPOSABLE INCOME IMPACTS
ON SAN FRANCISCO RESIDENTS IN 2000
(millions of 1973 dollars)

<u>Source of Impact</u>	<u>Manufacturing</u>	<u>Wholesaling</u>	<u>Total</u>
Net Employment Loss to City Residents ^a	\$10.0-12.0	\$6.0- 7.0	\$16.0-19.0
Income Differentials Between Old and New Jobs ^b	1.2- 1.8	1.8- 2.4	3.0- 4.2
Loss to San Francisco Proprietors Serving Employees ^c	1.8- 2.5	1.5- 2.0	3.3- 4.5
From Net Employment Loss	1.1- 1.5	0.7- 0.9	1.8- 2.4
From Income Differentials for City Residents	0.1- 0.2	0.2- 0.3	0.3- 0.5
From Decline in Nonresident Employment	0.6- 0.8	0.6- 0.8	1.2- 1.6
Net Loss to Proprietors of Declining Establishments	<u>N.E.^d</u>	<u>N.E.^d</u>	<u>-</u>
Total	\$13.0-16.3	\$9.3-11.4	\$22.3-27.7

- a. Based on estimated disposable income derived from CBP payroll data and estimated net employment impact.
- b. Based on estimated differences in disposable income among economic sectors and job availability impacts.
- c. Based on estimated loss of net disposable profits by proprietors living in the city. The estimate assumes (1) city residents spend about 80% of their disposable income in the city, (2) nonresident employees' expenditures will decline by about 10% of the income they would have received from the jobs they will lose, and (3) net revenues generated for San Francisco residents equals 15% of total expenditures by manufacturing and wholesaling employees. The estimate is based on net revenues only since any additional employment compensation would have gone to nonresidents.
- d. Not estimated. See text for explanation.

(a) the expected decline in expenditures by San Francisco residents losing their jobs or receiving lower paid jobs and (b) the decline in expenditures by out-of-city residents losing their city jobs. We estimate these impacts to range in the year 2000 between 1.8-2.5 million 1973 dollars for manufacturing employees and between 1.5-2.0 million 1973 dollars for wholesaling employees.

The fourth type of income effect is that related to the loss of income received by the proprietors of manufacturing and wholesaling establishments expected to suffer the declines in business. Part of that impact (the income they receive in wages and salary) is already included under the other impact categories.

The remaining impact is that associated with the net loss of profits. Though it is apparent that some city residents will realize a negative profit impact, the existence and significance of an overall net impact is not at all apparent. In other words, there are serious problems concerning (a) the estimation of the net profit impact on city residents and (b) the relevancy of such estimates for evaluating public policy decisions. The estimation problems relate to the ability to identify those expected to realize negative profit impacts and those who will actually benefit from being forced either to relocate in a more viable location or invest in a more profitable activity. The relevancy issue concerns the question: To what extent should actual economic profits be considered in the evaluation of public policy? Due to these estimation and conceptual considerations, we have not attempted to estimate the net profit impacts of the projected declines in manufacturing and wholesale employment.

3. Fiscal Impacts

The fiscal impacts of the projected declines in manufacturing and wholesale activities are determined by a variety of direct and indirect effects. The major direct effects include the loss of tax revenues collected from manufacturing and wholesale establishments. The indirect effects include the loss of revenues resulting from the adverse employment and income effects, e.g., the possible out-migration of some city employees whose jobs are eliminated and the loss of income for other business serving employees in these sectors, changes in the demand for city services, etc.

Due to data constraints and the scope of study we have limited our fiscal impact estimates to the loss of tax revenues resulting from (a) employment declines in the manufacturing and wholesaling sectors (i.e., the effects of such declines on revenues from the payroll expense tax) and (b) reductions in the value of capital equipment and structures in the manufacturing sector (i.e., the effects of such declines on property tax revenues).

Based on our average employment projections and estimated 1973 wages, the annual decline in payrolls will range between 78-83 million 1973 dollars in the year 2000 for manufacturing and between 91-96 million 1973 dollars in wholesale trade. Assuming that all establishments in these sectors would pay a 1% payroll expense tax, that would mean a

decline of payroll tax revenues ranging between .78-.83 million 1973 dollars from manufacturing and a decline ranging between .91-.96 million 1973 dollars from wholesale trade in the year 2000.*

Due to the lack of readily available data about property taxes paid by the manufacturing activities projected to decline, we based our estimate on (a) the 1967 Census of Manufacturers' estimate of new capital expenditures in San Francisco and (b) national ratios between capital and new capital investments in manufacturing. According to these rough estimates, the projected decline in manufacturing employment will be accompanied by a decline in capital of between 40-50 million 1973 dollars in the year 2000. Based on assessed values at 25% of value and a \$12.75 per \$100 tax rate, the loss in property tax in 2000 will range between 1.3-1.6 million 1973 dollars.

4. Summary and Conclusions

The projected decline in the manufacturing and wholesale trade sectors will generate socioeconomic, fiscal and land use impacts on the city and its residents. This section dealt with the major adverse employment, income and fiscal impacts associated with the decline of these sectors. The purpose of the analysis was to establish a range of magnitude for the potential benefits of halting the decline and thus eliminating these adverse impacts. A similar analysis can be carried out in order to estimate the major benefits of not merely arresting the decline but also stimulating actual growth. Though no numerical estimate was derived, it is apparent that the benefits generated by such growth will be much smaller than those obtained from arresting the decline. In other words, an employment growth of 1000 jobs in manufacturing, for example, will produce considerably

* The wage estimates were derived from County Business Patterns data for 1973. The payroll expense tax estimate is based on the current 1% tax rate. We are not, however, sure that the estimate represents actual tax collection in 1973. Our analysis shows that the total 1973 payrolls of activities subject to the tax (excluding government, banking, insurance carriers, and nonprofit organizations), exceeded \$3.8 billion. This estimate derived from CBP data is almost identical with that derived from California Employment & Payroll data published by the California Department of Human Resources Development in September 1974. One percent of this value would yield \$31.8 million in tax revenue. Adding to that an estimated \$3 million of business tax from nonwage and salary establishments, the total tax revenue would be close to \$35 million. The city's statement of revenues, however, shows less than \$24.3 million of revenue in 1973 for both taxes. Though part of the discrepancy (over \$10 million) is due to exemptions allowed for actual work done out of the city, it is most unlikely that the amount of work out of the city accounts for 30% of payrolls and other employment subject to tax. We therefore recommend that city records be compared with the state records of state payroll taxes paid by city establishments in order to identify the source of the discrepancy and investigate possible underpayments.

less benefits for the city than the prevention of a 1000 job loss in the sector. The major reasons for that are the continuous shifts in the city's occupational mix and the decline in total labor force illustrated in Table II-28. Any net increase in residents' employment will therefore have to come from the existing labor force, i.e., the ranks of the unemployed. Though a decline in unemployment is clearly desirable, the problem is that there is no evidence of any significant relationship between growth in job opportunities per se and the unemployment rate of city residents in most occupational categories. (See Chapter II, Section E.)* Unless these trends are reversed net employment gains by residents will be only negligible though sectoral wage differentials will benefit those residents able to get higher pay jobs in manufacturing and wholesaling instead of continuing or getting lower pay jobs in the other economic sectors.

The major employment benefits of preventing the loss of 7600 manufacturing jobs by 2000 are those associated with the preservation of 1275 blue-collar jobs expected to be held by city residents at that time if the sector's decline is halted. The main employment benefits of preventing the loss of 8000 wholesaling jobs by 2000 are significantly smaller. They will consist primarily of saving 690 blue-collar jobs for city residents. The analysis assumed that growth in other sectors will continue as projected, i.e., no policies designed to prevent growth in FIRE and Services will be undertaken. The potential benefits of preventing the elimination of close to 2000 blue-collar jobs for residents in these sectors are significant; the crucial question is whether that can be actually accomplished and at what cost. The next section will deal with the availability of public policy tools and the limitations imposed on the effectiveness of these tools in altering the projected trends. The final section will then evaluate the desirability of specific tools and suggest possible public strategies for dealing with some of the major issues facing the city.

*It should be emphasized that this observation relates to periods of long-term relative stability in unemployment rates when most unemployment in the city seems to be due to a combination of technological developments and various socioeconomic factors rather than job availability per se. However, during periods of recession when residents lose their jobs because of the economic slowdown, any increase in job opportunities will undoubtedly reduce unemployment.

D. METHODS OF INTERVENTION TO ALTER TRENDS AND THE FEASIBILITY OF TREND ALTERATION

1. Effect of Public Actions on Locational Decisions

The impact which central city public actions may have on the retention or expansion of the industrial and related commercial service base is relatively limited even when trend alteration is desirable. As indicated by Professor Michael C. Conroy:

"...The position of every urban economy within the national economy and the intricate relationship which its economic structure has to the economic structure of other urban places in its region both suggest that the amount of leverage which residents in any single city have over their own economic structure is severely limited. National economic development has, until recently, favored the growth and development of older established large cities. The present trend, however, appears to be one which favors on many levels both small cities in the shadow of the metropolises and newer cities distant from the traditional urban centers. Decentralization of previously heavily concentrated industries implied problems of adaptation for previously favored cities. (If the presence of some of these industries can be considered, on balance, a favor.)"*

Acknowledging the fact that economic or industrial development of any single city is an immensely complex process subject to substantial external influences, any specific locational advantages are dependent on long-term changes in the location of population, the national composition of industrial output, the allocation of governmental expenditures, changes in the age and skill composition of the local and national labor forces, and changes in the technology which determine not only what we will produce and consume but how and therefore where we shall produce and consume.**

Public sector intervention, including the provision of government-financed services and amenities, is usually not ranked high by firms considering the comparative attributes of new locations. However, increased taxes related to an actual or subjectively determined deterioration in the level of public services provided may well stimulate consideration of relocation which may have been initially predicated on other and more generally

* Michael E. Conroy, The Challenge of Urban Economic Development: Alternative Goals for the Economic Structures of Cities (Austin: Center for Economic Development, The University of Texas, 1974), pp. 77-79.

**Ibid., p. 169.

accepted factors such as comparative labor costs and market proximity. It is to this issue that the City of San Francisco can address its future activities -- that is, a coordinated effort to correlate taxes for existing firms with a more highly responsive provision of a specifically tailored range of public services.

2. Types of Tools

The types of problems concerning industrial location and viability for which cities might use intervention tools can be separated into three groups:

- Attractive,
- Preventive, and
- Corrective.

The category into which a particular problem is placed would be dependent upon the circumstances in which that problem occurs. A problem might be one which prevents the city from attracting new economic establishments. In such a case, it would be considered an "attractive" problem. In another location the same problem may cause some industries to leave the city, in which case, it would fit into the classification of a "corrective" problem. The use by the city of a specific tool in a given circumstance may also be classified as either an attractive, preventive, or corrective action. Just as a problem can be attractive in one circumstance and corrective in another, so can a specific tool be used for attractive purposes in one location and preventive or corrective purposes in another.

Attractive tools are those which can be used to attract new economic enterprises to a given city. They may also be used to encourage existing industries to expand within the community as opposed to other locations. Attractive tools are often used by cities which are in competition with other cities for the same new industries. The particular competitive tool a city selects is often based upon types of tools being used in surrounding locations and upon the general nature of the city's locational advantages. While several studies of causes of industrial location have shown general city climate to be more important to most industries than particular financial incentives offered by varying towns, many communities continue to offer these incentives. Various forms of financial subsidies which include tax concessions, municipal bonds, land write-downs, and similar programs are used almost exclusively in an attractive situation.

Studies of the reasons behind industrial location have shown that the policies available to the city have comparatively little effect in determining industrial location in comparison to major determinants of location. However, the actions of an individual city do become important when all of the other considerations are approximately equal between alternative sites. The most useful municipal tools are those that concern the general cooperation the city is willing to provide prospective industries, the general character and climate of the city, and the quality of some specific city services.

Preventive tools are used to prevent the occurrence of problems which could lead to relocation or economic failure of existing industries. Tools used in preventive applications generally seek to maintain a healthy business climate and to provide existing industries those city services which they need to be competitive with other establishments. Application of preventive tools requires foresight on the part of city officials in that they must be aware of the potential for the development of particular kinds of problems before symptoms of these problems become acute. In some cases, even existing industries may not be aware of a change of circumstances which may portend the occurrence of the problem.

The types of tools which can be used in preventive situations include programs which facilitate the expansion of existing industry, programs which protect industrial zones from encroachment by other land uses and those which maintain a high quality of city services. One of the primary reasons why industries relocate is because their existing site does not provide sufficient room for anticipated expansion. Industries may also move because other land uses which may move into their area may create a neighborhood which industrial activities find undesirable. Finally, while the level of city services is not cited by firms as one of the major reasons for industrial location, it is identified far more frequently as a reason why firms decide to move from a specific site.

The final class of problems and tools is corrective. They are used by cities in an attempt to correct problems which are currently perceived by industry and which tend to influence industry to move from the existing community. Because corrective tools are used after the problem has been identified, recognition of the need for use of the tool should be followed by prompt action in order to minimize the adverse impact the current detrimental situation has on existing industries.

There is little if anything the city can do to rescue businesses which are faced with imminent failure. The only actions the city realistically can or should take to prevent business failure are those which would correct problems which prior city actions have caused. Only in cases of strong public need for a particular industry should the city subsidize or design programs to assist an establishment which cannot otherwise remain viable in the free market.

Examples of tools which may be used at the corrective level include increased crime prevention efforts in areas of high crime, rezoning industrial areas in an effort to eliminate the encroachment upon these areas by incompatible or competing land uses, improvements in public transportation and parking so that industry workers will be able to reach the location, and improvement of inferior neighborhood conditions.

Different tools are most suitable to different sized areas. For instance, urban renewal is a program which is most effective when it treats large areas. In contrast, street closings to provide establishments with improved loading and unloading facilities are best dealt with on a case-by-case basis. Improvement of the quality of the city's schools must be undertaken through a citywide program.

By knowing the nature of the problem or issue, the city program which is best able to meet current or potential problems can be chosen and implemented. Given the knowledge of the type of program which would be most effective and the size of the area the program must cover to achieve its desired goal, initial estimates of the city resources necessary to conduct the program and the feasibility of the program can be assessed.

Just as different tools are best used in different sized areas, so are different tools used to improve business conditions for different types of establishments. For instance, industrial aid bonds are used only for industrial and warehouse projects. Amenities such as pleasant sidewalks and decorative street lighting have maximum benefit when used in retail and commercial areas. An increase of both water pressure and availability is often a more important issue for industrial users than it is for retail users. In contrast, close accessibility to public transportation, while important to both industrial and retail establishments, is somewhat more desirable for retail establishments because of the need to link them with potential consumers.

Some tools which have been used to enhance communities in certain parts of the country are illegal in California. The prime example is the use of industrial aid bonds which during the 1950s and 1960s was a commonplace means which communities in several southern states used to attract industries. By law usage of such subsidies is prohibited in California. Similarly, several other intervention tools which have been used with some success elsewhere are illegal in California. Among these are low assessment valuations, differential tax rates for industrial and other uses, cash donations by cities to specific industries, and leasing of city facilities at below market rates. Studies of the reasons for industrial location have shown that many of these attractive techniques have little influence in the industrial location decision and so it is likely that making them legal in California would not significantly change current industrial location patterns. A discussion of many of these techniques has been included in this paper to provide the reader with information concerning the entire range of intervention tools which have been used.

3. Tools Grouped by Associated Actions

In addition to being classified as attractive, preventive, or corrective, intervention techniques can also be grouped by the types of actions associated with them. Some transfer public monies to private industry whereas others benefit industry by spending public monies for public services which the industry uses. Still other tools are basically legislative in

nature, such as changing of zoning laws and building codes. Nine broad categories of intervention tools have been used by cities across the country. They are:

- Tax concession
- Municipal bonds
- Other financial subsidies
- Public services improvement
- Infrastructure improvement and development
- Zoning
- Legislative action
- Enhancement of business climate
- Intergovernmental policies

a. Tax Concession

Tools which are used by communities to provide tax concessions to individual establishments have the purpose of making the community more attractive to the business by lowering its tax cost. Cities hope that by lowering tax rates they will improve the overall locational advantage they may have over competing communities.

Three basic types of tax concessions have been used: exemptions, stabilization, and underassessment. Each of these tools is illegal in California. It may be difficult to enforce the law concerning underassessment. While these tools may be used by communities in some other states, the locational advantages they create for the specific community are relatively small. Historically city taxes account for only a small percentage of a business's total cost. In addition, these taxes may be written off as business costs on the firm's federal income tax. Hence, the net savings to the firm is further reduced.

b. Municipal Bonds

The second type of financial inducement which has been used by communities across the country has been municipal bonds, often called industrial aid bonds or industrial development bonds. Depending on the laws which govern the use of these tools in a particular state, municipalities float either general obligation bonds, which are based upon the good faith and credit of the issuing municipality, or revenue bonds, which are dependent upon the revenues of the project constructed with the bond proceeds. The proceeds of the bond issue can be used for one of several purposes, financing the purchase of land and the construction of buildings and/or

equipment which are then leased to prospective industrial customers or the provision of long-term risk capital for particular firms. In either case, the value of such programs to the industry is derived from the lower interest rates municipalities can use to generate capital as opposed to the interest rates the private sector must pay to attract the same amount of capital.

Municipalities have historically been able to float bond issues at comparatively low interest rates because the interest payment the bond holder receives from municipal bonds is exempt from the federal income tax. If an industry leases buildings or equipment from a municipality, whether the municipality purchased or constructed the building or equipment with the revenues of a bond issue, the savings to the industry are in direct proportion to the difference between the rate at which the municipality can borrow money and the rate at which the industry can borrow money. In addition, because the industry does not tie up its own capital funds in the purchase of either the facility or the equipment, its capital position is more flexible than it would have been if it had to make such purchase.

Municipal industrial-aid bonds offer another attraction to industry. However, as with most other municipal incentive devices, studies of the effectiveness of these bonds in attracting industries to a particular community have shown them to be useful only as a marginal influence. If a particular community did not offer good accessibility to markets, raw materials, an adequate labor supply, and a good business climate, the availability of industrial aid bonds would have little effect in attracting new industry.

Another problem faced by some municipalities which have used these bonds is the desire of other businesses in the community to obtain the same benefits. Only a small percentage of any town's establishments has benefitted from the use of this tool and there remains serious question as to why these benefits should be limited.

The use of industrial aid bonds to provide specific subsidies to businesses is illegal in California. However, various court tests have ruled that private use and profit from public developments initially designed for the benefit of the public good as opposed to that of any specific establishment are constitutional. Therefore, to the extent that any municipal bond programs in California have as their primary purpose the pursuance of public goals, they are constitutional, even if they may benefit particular establishments. The scope of potential bond issues is, however, limited by provisions of the Internal Revenue Code relating to the tax-exempt status of industrial development bonds.

c. Other Financial Subsidies

This category includes several forms of city action:

- Cash donations
- Payment of moving expenses

- Payment of repair and installation costs
- Sales of sites or buildings at low prices
- Donation of sites and/or buildings
- Low rentals of sites and/or buildings
- Advance agreement on utility rates and/or service

Many of these tools are not legally available in California. However, if they were legal, they would be able to provide some assistance to some of the major problems San Francisco industries face. For instance, if the city could provide sites or buildings to industries in the city wishing to expand at below market rates, they could help to solve the problem which is important for many small industries deciding to relocate. Similarly, an agreement between the city and a specific industry whereby the city would pay the relocation cost of an industry desiring to move from one location within the city to another would also help encourage industries which have decided to relocate to stay within the city. However, some of the other tools which have been used in other communities are not under city control. For instance, the city has no influence upon any electric rates paid by establishments within the city.

d. Public Services Improvement

The range and quality of city services make up a great part of the "business climate" which is seen by many industrialists to be among the prime factors affecting business location. Many industries have stated that the quality per se of specific city services does not enter into most of their location decisions as the quality of these services is often taken for granted. On the other hand, when industries decide to move from one city to another, inadequate city services at the current location are often one of the reasons given for the relocation decision. Therefore, the maintenance of a high level of city services by San Francisco can improve its ability to retain existing industries. Several services are seen as being important to industry:

- Fire
- Police
- Public transportation
- Schools
- Utilities

- Water and sewage service
- Day care
- Labor training
- Garbage disposal
- Street maintenance

The quality of each of these services is directly under city control. California cities may legally adopt the level of service they consider appropriate. The upgrading of the services the city offers to industry would require cooperation of almost all city departments. In order to be effective, this must be sponsored through the administrative agencies. In addition, the improvement of one particular service will probably not have a significant impact upon an establishment's perception of the overall level of service quality. Rather, coordinated efforts must be taken to improve all or groups of several services.

The types of actions which would improve service quality include the following:

- Making industrial areas more accessible via public transportation.
- Improving the city's day care facilities so that single parents in the city would be free to seek jobs in the city's industries.
- Maintaining streets at high quality and closing off streets and/or alleys when such closing would facilitate industrial operations while not seriously affecting traffic flow.
- Improving the quality of the city schools so that the industry labor force would be more willing to live within the city.

e. Infrastructure Improvement and Development

Several parts of the city infrastructure influence its attractiveness to industrial establishments:

- Streets
- Lighting
- Water and sewage

- Drainage
- Parking
- Utilities

In many locations, industries secure promises from cities that these infrastructure services will be extended to their sites before a locational decision is made. Since almost all of San Francisco presently receives an adequate supply of each of these services, their use in the city will be a less effective tool. However, two of them might be important in retaining existing firms -- lighting and parking. A currently perceived problem for many establishments within the city is crime. Improved lighting in industrial areas might serve to lower crime rates. In addition, some industries have cited difficulty in finding employees willing to work in certain sections of the city because of the high incidence of crime. Increased lighting in these areas might make them more attractive to the available labor force.

The lack of parking areas in the city is another problem important to industries. City programs for increased parking facilities in industrial areas would help to ease employers' and employees' complaints about this problem. Unlike several other services which are most effective when conducted throughout a large area, each of these policies could be designed for small neighborhoods.

f. Zoning

One of the most useful tools at the city's disposal is zoning in its various forms. While some establishments are not aware of the powerful influence zoning may have upon the long-range desirability of their location, those establishments which are aware are highly concerned about local zoning regulations. Traditionally, industrially zoned areas have often been those which are viewed as having the least value for what has been considered more desirable usage -- i.e., commercial and residential. However, in recent times, more and more concern is being given to the protection of industrial areas from encroachment of other land uses.

Prohibiting the infringement of other uses, or making modifications in the zoning code which benefit industries and do not violate the general provisions of the zoning ordinance can make industrial areas stronger.

g. Redevelopment

The use of urban renewal tools basically involves city purchase of land areas, redevelopment of the land areas for the public good, and re-sale back to potential users. For instance, condemnation and eminent

domain could be of use to a firm wishing to expand within the city limits but unable to acquire appropriate property. Similarly unused land or vacated properties could be obtained by the city and redeveloped, thereby improving both the character of the neighborhood and the city's tax base. The use of legislative tools involves considerable city resources and also includes questions of legaligy concerning the city's right and ability to acquire parcels in the name of improved economic health.

h. Enhancement of Business Climate

The creation and maintenance of a good "business climate" seems to be an important factor for many industries. Almost every community interested in industrial development maintains either a public or private agency whose function is to provide information and services to corporations interested in locating in that city. The services range from providing simple information about the location of the city, its climate, its population, the size of its market, detailed analyses of the skills of the available labor force, wage rate information, extent of unionism, tax laws, assistance in selecting sites, and acquiring financing. In addition, these agencies can be of aid to existing industries wishing to find other locations within the city.

Another tool which could affect the climate in industrial areas is that concerning the development of amenities within them. Included would be promotion of a limited number of retail areas and restaurants which could be frequented by the industrial labor force. The creation of small parks and rest areas and more pleasant sidewalks would also serve to enhance the environment of the industrial area. City actions can heavily influence the appeal of industrial neighborhoods.

i. Intergovernmental Policies

The final broad set of tools are those which are intergovernmental. Historically these tools have included such programs as Title I funding and urban renewal. Recently, they have been replaced by the Housing and Community Development Act of 1974. These tools are financial in nature but involve the use of federal and state funds as opposed to city funds. As such their use does not increase local spending requirements in most cases.

However, the success of these projects in central cities has been limited. The Butchertown experience in San Francisco is an example. Nevertheless, the ability to use special revenue sharing for small-scale projects may provide the funding required to conduct some of the improvements in service and infrastructure which could affect retention of existing industry.

4. The Degree of Influence Possible in Factors Influencing Industrial Growth and Decline

All of the tools of intervention described above could theoretically have an influence on business decisions in San Francisco or in any other location. However, the likelihood of their having any measurable impact depends on the degree to which they address those factors having the greatest influence on industrial locational decisions, growth or decline.

It is important to note at the outset that many factors which affect or change the San Francisco economy are not susceptible, or easily susceptible, to manipulation by any available and acceptable public actions. The major factors determining the growth or decline of particular sectors of the economy -- and particularly the decline of employment in manufacturing -- are described in Chapter II. These factors can generally be grouped into three sets: those over which the city is not likely to have any influence regardless of cost; those which could be influenced at some cost; and those which might be influenced indirectly by actions which do not directly affect the industry but which are conducive to growth.

a. Factors Influencing Industry Growth and Decline not Susceptible to Changes Regardless of Cost

In this group could be placed the following factors having an influence on certain industries, particularly certain manufacturing industries:

(1) Access to Raw Materials

Those industries, such as petroleum extraction and agriculture, which are dependent on a location tied to the availability of specific resources which are not available in San Francisco obviously cannot be attracted to the city. It should be noted, however, that the Port may indirectly make San Francisco a local "source" of raw materials imported from afar in terms of use in manufacturing, thus leading to the location of an industry here. Thus, in the past the importation of coffee and copra through the Port led to the establishment of food processing here since the Port of entry was in fact the source of raw materials.

Today the ease of transportation to other areas and relatively low transportation costs make the influence of this factor on manufacturing in the city negligible for most industries.

(2) Access to National Markets

Producers who have a national market orientation and choose a location which is central to the market, weighted for market potential in each area, cannot really be affected by one locality. San Francisco cannot change its location and it cannot alter the basic market pattern in the county. Therefore, it cannot, for instance, change the decision of a firm which wishes to be in the Midwest because such a location is central to national markets.

(3) Access to Low-cost Labor

Although it is barely conceivable that the city could have some influence on labor costs in the city, the possibility of its having an impact which is significant on an interregional basis is so remote as to exclude labor costs from the group of factors which can be affected. Firms which seek southern or midwestern locations because of lower labor costs can probably not be influenced in any way by the city.

(4) Mechanization

Declines in employment in a specific industry caused by changes in the technologies of production are not susceptible to influence by the city.

b. Factors Influencing Industry Growth or Decline Which Could be Influenced at Some Cost

There is a host of factors affecting the locational decision of industrial firms in this category. The chief questions revolve about whether the factors which can be affected are likely to be determinative of a locational decision and whether whatever cost would be involved for the city would be worth the benefits to be obtained.

Following are the types of factors entering into locational decisions which might be affected at some cost to the city:

(1) Access to Highly Skilled Labor

Certain industries, notably research and development in electronics and segments of the apparel, metals, furniture, and other industries, depend upon a reservoir of highly skilled labor. The city might have some influence on industrial location through programs of specialized job training on a massive scale or by financing the development of major educational institutions. For example, the development of a university with research capabilities equivalent to those of Stanford or Massachusetts Institute of Technology might make San Francisco a favored location for the electronics and aerospace industries, similar to Palo Alto. This type of action requires a long-term commitment and extensive subsidies. Similarly, the city might subsidize an excellent school in textile or apparel design to promote the expansion of those industries.

(2) Access to Transportation

Within certain reasonable limits dictated by geography, the city can have some influence on industrial locations by improvements in transportation. Construction of BART is an example of an improvement which will probably affect the location of the finance industry. Major Port facility development can have an impact on shipping, cargo handling, warehousing, and, possible, manufacturing. New highways may, other factors remaining unchanged, make San Francisco a more favorable location for industry.

However, it must be remembered that, in a regional and national context, San Francisco's options are limited by its location on a peninsula and resulting isolation from major railheads and transcontinental freeways, compared with other locations in the Bay Area.

(3) Room for Expansion and Site Efficiency

Many growing firms, particularly manufacturers, move because of inability to obtain adequate space at a reasonable cost and a site which is conducive to efficient operations. Through redevelopment of existing land and similar techniques, the city might make available industrial sites in San Francisco which are competitive with sites in other areas of the region in all respects, including cost, environmental conditions, transportation access, space, and services. In most cases this would require some subsidy of land costs and site assembly. However, experience to-date indicates that such actions are likely to be most effective only where a site can be made available for expansion for an existing firm rather than to attract new firms.

(4) Security

Many industries are concerned about security factors in the choice of a site, particularly in the case of warehousing and manufacturing of low-bulk, high-value products. This involves concern about the security of the site in terms of crime, the risk of loss through theft by employees, and the risk of fire or flood. Theft by employees is probably not within the control of the city, but it might influence site security through improved lighting and policing. The actual or perceived level of security in a particular area can also influence the ability of an employer to attract employees particularly women.

(5) Comparative Tax Structures

A favorable or unfavorable tax structure, by comparison with competing areas with respect to specific industries, can influence a locational decision by a firm. In fact, it would appear that many firms may choose to "move across the line" to South San Francisco or move to other areas, at least in part because of more favorable tax situations. San Francisco could potentially affect such decisions by providing special treatment to desired industries or by lowering its taxes on industry across the board. Obviously there is a potential direct cost involved but there are situations where the actual costs of a selective tax exemption will be less in the end if some industry chooses not to move away.

One of the largest problems in attempting to tailor the tax structure to make it more favorable is the isolation of target industries in order to ensure that revenues are not lost in excess of what would be required to achieve the desired effect.

Legal limitations impose severe restrictions on the use of measures to alter taxes, at least with respect to specific firms or industries. However, most cities involved in industrial development programs in the

past have chosen certain means intended directly or indirectly to lower effective taxes or effective overall costs paid by industrial firms, compared to competing areas. Whether taxes are lowered directly or by means of indirect "tax expenditures" (such as government financing of buildings), the effect is the same.

(6) Climate for Industrial Operations

Often firms are unhappy about their locations or are seeking locations where there is some sign of governmental responsiveness to their needs. Like ordinary citizens, industrial firms prefer locations where they feel they are wanted and where their needs will be attended to. Many firms do not consider San Francisco to have a climate favorable to manufacturing or other "industrial" operations. A change in the perceived climate might have some impact, if not on those not presently in the city, at least on those already here. It would appear that a climate that is perceived as favorable toward commercial activities has probably influenced growth of those sectors of the economy.

(7) Labor Relations

The management of many firms often mention the quality of labor relations as a reason for choosing or avoiding a location. In all likelihood, they city cannot have a significant impact on labor-management relations but there are some tools available which might enhance relations in the city of which might improve the perceived climate of labor relations.

c. Factors Influencing Industry Growth or Decline Which are Indirectly Susceptible to Influence

This category includes factors influencing the growth or decline of employment and industrial locational decisions which might be influenced indirectly, with or without direct monetary cost. The difference between this category and the others is that the city can have an influence, but not by acting directly to affect a specific firm's or industry's decisions.

(1) Increase in City Population

Many industries choose a location on the basis of the available market within a reasonable distance. In the past, the fact that San Francisco was the only real concentration of population in the Bay Area caused the growth of many sectors here. Some of the previous decline in employment has resulted from a decline in population and, therefore, a loss of markets, particularly compared with growing suburban areas in the Bay Area.

San Francisco could have an influence on employment in some sectors by means of encouraging growth of population and buying power within the city. An increase in population and buying power could contribute to increases in employment in retail trade and services, possibly then having an effect on wholesaling and some forms of manufacturing, such as food

and beverages, furniture, and leather products. Generally, however, for the influence to be effective on manufacturing, the growth would have to be substantial and there would probably have to be a relative shift of population growth from surrounding areas to San Francisco.

The influence of population growth on employment in retail trade and personal services, on the other^{hand} is quite direct

(2) Access Demand Outside the City

Improved access to existing and growing sources of demand for city goods and services can have an effect similar to stimulation of local population. Thus, construction of BART and improvement of access into the city for suburban residents can potentially increase the demand for retail goods in the city, stimulating growth in local retail trade employment, and then possible wholesale trade employment.

Stimulation of tourism in another method by which the demand for goods and services in the city is increased, thereby increasing employment in the affected sectors.

d. Summary Evaluation of the Probably Success of Intervention

The prior review of tools available to the city and of the factors susceptible to influence indicates quite clearly that most of the factors over which the city could have an influence, irrespective of cost, are those which are least important in industrial decision-making. Within the category of those factors which could be influenced, the two which might be most important for manufacturers, access to highly skilled labor and favorable tax structure, would be the most costly to change. Our analysis suggests that the most significant impact on employment might be accomplished by influencing the demand for goods and services in the city, as suggested in the third category. However, in this case, the influence would be principally on employment in retail trade and services and to a lower degree wholesale trade, not on manufacturing.

E. THE ECONOMIC EVALUATION OF PUBLIC INTERVENTION AND GENERAL ECONOMIC STRATEGIES

Based on the analysis presented in Chapters II, III, and IV and the previous sections of this chapter, the present section deals with (a) the evaluation of public intervention tools based on their social desirability and (b) general alternative economic strategies for dealing with some of the major economic issues facing the City of San Francisco. The evaluation of public policy tools is based on three major interrelated considerations. They are (a) the objectives of public intervention, (b) the nature of the issues to be addressed by the policy tools under consideration, and (c) the costs and benefits (i.e., social desirability, associated with the application of specific tools or strategies for dealing with the issues.

1. Public Policy Objectives and the Evaluation of Policy Tools

The major general objectives of the city's public policy are (a) to encourage economic ^{trends} which will benefit the city and its residents while discouraging or altering trends having adverse effects on the city's fiscal base and/or on the residents' overall welfare and (b) increase the overall stability of the city's economic structure and reduce its susceptibility to serious cyclical fluctuations. The public policy tools which are available to the city in pursuing its objectives include (a) "insignificant cost" policies (e.g., zoning changes, the closing of little used streets and alleys, etc., and (b) policy options involving significant public funding (e.g., public services, redevelopment, etc.)

The use of insignificant cost policies should be evaluated according to the policy's ability to contribute toward the attainment of the city's objectives based on the net benefits they generate. Since no measurable investments of public funds are necessary each policy of this type should be used whenever there is a net public gain to be obtained.

The evaluation of the "significant public cost" policies, on the other hand, involves not only the determination of whether there are net benefits to be obtained but also whether these benefits exceed (a) the cost of the policies considered and (b) the potential benefits of alternative programs competing for the same funds. Though the first condition (that benefits should exceed costs) is generally recognized, the second requirement (that the benefits exceed those of alternative programs) is sometimes overlooked. This requirement is due to the limited financial resources available to the city. The city's budget constraint makes it impossible to actually undertake all the programs whose social ^{benefits} exceed their social costs. In other words, the city simply does not have the funds necessary to undertake all the projects which could yield a net return to city residents. It is, therefore, necessary not only to compare the costs and benefits of specific policies in relation to the city's objectives but also to rank policies and programs in terms of their benefits to cost ratios and adapt those yielding the highest benefits per dollar cost. It might be useful to illustrate this point by a simplified example. Assume that a million dollars of expenditures could yield \$1.5 million of net benefits if spent on Program A or \$2 million of net benefits if spent on Program B. In terms of social desirability both programs should be undertaken since each produces net benefits in excess of its costs. If, however, the city has a limited budget of only \$1 million, it cannot undertake both programs and hence it should choose Program B only.*

*In technical terms the costs of Program A are equal not to the \$1 million actually spent on the program but to the \$2 million of benefits that could be obtained by the alternative Program B. This latter cost concept is referred to by economists as being the "opportunity costs" of Program A. This example also assumes that the benefits of the two projects are mutually exclusive; the instigation of one project has no influence on the level of benefits obtainable from the other project.

The evaluation of the desirability of public policies depends, therefore, not only on the benefits to cost ratios of each program individually, but also on those of all alternative programs.

Since our evaluation process could not conceivably consider all city issues and programs, it is important to state explicitly (a) the major economic issues of concern to be analyzed and (b) the major assumptions underlying our evaluation and recommendations.

2. Major Issues -- Evaluation and Recommendations

The major purpose of the analysis presented in Sections A-D of this chapter was to provide the analytical basis for dealing with six major issues of concern to the City of San Francisco. Based on the analysis presented thus far, it is now possible to address each of these issues directly and to present our evaluation and recommendations.

a. Employment Trends in the Manufacturing and Wholesale Trade Sectors

There are two major issues concerning existing and projected employment declines in manufacturing and wholesale activities in San Francisco:

1. Can the decline in those sectors be arrested and what would be the major costs and benefits of policies designed to achieve this objective?
2. Can the city stimulate overall employment growth in manufacturing and wholesaling and what would be the costs and benefits of the required policy tools?

disadvantages in manufacturing and a comparative and competitive

The first part of each question relates only to the feasibility not the desirability of trend alteration. The answer to that part of each question is yes. The city cannot only arrest the overall decline of these sectors but actually stimulate employment growth. Based on the analysis presented in Chapter II, the city has an overall comparative and competitive advantage in wholesale trade. In order to arrest the decline in manufacturing, the city will have to adopt policies which will not only prevent further deterioration in the overall competitive position of city manufacturers but actually improve their position. The main reason for that is the time lag existing between a change in existing conditions and locational adjustments. The difference between short run and long term locational decisions was analyzed in Chapter III, Section A. Briefly stated, there are many establishments which are presently in the city only because of their large sunken capital investment or other short run considerations. In the long run, however, these establishments will probably leave the city in response to changes which have already occurred.* In order to prevent an overall employment decline, it will therefore be necessary to replace such establishments by either new ones or through significant expansion of existing firms. This will require policies which will increase the competitive position of manufacturing in the city.

*Most of these establishments belong to the "irreversible decline industries" discussed in Section B above.

The analysis in the previous section (Section D) showed the limitations imposed on public policy in affecting the major factors which determine locational decisions. It is apparent that in order to stimulate growth or even to completely arrest the decline of manufacturing and wholesaling employment, the city will have to adopt significant cost policies such as major redevelopment combined with the tax exemptions and subsidies. These policies, if applied on a large enough scale, will probably increase significantly the competitive position of many activities and result with overall employment gains. The problem is that the city's comparative advantage will not increase at the same rate as the private competitive advantage and that the costs of such intervention tools are most likely to exceed their benefits.

The real issues are, therefore, not whether the city can arrest the decline or stimulate growth but rather whether such policies are desirable, i.e., are the likely benefits significant enough to justify the cost of such policies. The impact analysis presented in Section C showed the major employment benefits of preventing the loss of 7600 manufacturing jobs by 2000 to be the preservation of about 1275 blue-collar jobs for city residents. The benefits are clearly significant enough to merit serious consideration. The crucial question is whether the benefits exceed the cost of intervention. The costs, as explained above, will be considerable. Insignificant cost policies could slow down the projected rate of decline, but significant cost policy tools will be required to arrest the decline and prevent any job losses. This is not surprising when we consider (a) the overall economic structure of the city (Chapter II), (b) the limited ability to affect many locational determinants (Section D above), and (c) the fact that for each crucial impact job* to be preserved for a city resident, the city will have to prevent the decline of six jobs (7600 divided by 1275).

Similar analysis of the wholesale trade sector shows that the cost of preventing the decline of 690 blue-collar jobs for city residents by 2000 will be equally high, at least on a cost per job basis. In order to preserve the 690 crucial jobs, policy tools will have to arrest the decline of 8000 total jobs in the sector. This means saving 11.5 jobs (8000 divided by 690) in order to provide one crucial job for a city resident. We have, therefore, reached the conclusion that the costs of the large scale investments required to arrest the decline in these two sectors will probably exceed the benefits so generated. It should be emphasized that this does not mean that we place a low value of benefits on jobs for city residents. It merely means that the limited funds available to the city could generate greater benefits through other programs and that much lower cost programs than overall subsidies to industry can achieve most of the same benefits.

*The major impact of 1275 blue-collar jobs represented only part of the total number of residents' jobs to be eliminated. The other jobs, however, are not considered to be crucial or of equal importance since resident employees in those jobs are not expected to have any great overall difficulty in finding other similar jobs in the city.

Since cost benefit analysis does not justify the application of the policy tools required to arrest the projected declines, it certainly does not justify the level of intervention required to encourage actual growth. There are two reasons for that conclusion. First, as explained in Section C, the benefits from an increase of 1000 jobs are smaller than those from preventing the loss of 1000 jobs.* Second, the cost of generating 1000 new jobs is usually greater than preventing the overall decline of 1000 jobs. This is because of the increasing difficulty of attracting each successive activity to San Francisco. The costs of increasing overall employment will thus be higher than those of arresting the decline while the benefits will be lower.

The employment benefits of arresting the decline of manufacturing and wholesale trade dealt with the overall benefits on the sectoral level. These benefits relate solely to the first major city objective of encouraging growth (or in this case preventing the decline) which will benefit city residents. The analysis revealed no basis for estimating any positive overall benefits to the city's economic stability resulting from arresting the projected decline in these sectors. In other words, we have no reason to believe that the manufacturing and wholesaling trade sectors contribute to the economic stability of the city. These sectors actually tend to show a much lower degree of cyclical stability than the other major economic sectors in the city (Services, Government, and FIRE).

Though general large scale programs which involve major investments are not desirable, the city should (a) undertake all low cost measures to slow down the rate of employment declines and (b) review any possible exception on a case-by-case basis. One such exception is the apparel industry. The impact on city residents on a decline in employment in the apparel industry will be much higher than an equivalent decline in any other industry. This is due to the high percentage of city residents employed in the industry, most of which would have great difficulties obtaining other jobs. The need for case-by-case evaluation is based on two major considerations.

First, because of the limited amount of resources available to the city, it should endeavor to concentrate on using tools on a case-by-case basis, where they are designed to relieve the problems facing a specific business or group of businesses. Because the relocation decisions of many establishments will not be affected by any of the tools, providing them with the services of the programs will not retain additional industries in the city. Therefore, the use of these tools should be concentrated on those industries which have not already decided to leave San Francisco for reasons other than those addressable by the tools. There will, of course, be cases in which other industries may benefit from the

* The reason being that a smaller percentage of city residents are expected to get the new jobs than the percentage of residents in the jobs to be eliminated. For further explanation see the summary and conclusions of Section C.

program and in some rare cases this additional service may cause them to reverse their out-migration decision.

The second reason for a case-by-case approach is the need for flexibility. Because the tools will often be designed to ameliorate the problems faced by one establishment, they should include enough flexibility to allow them to meet the requirements of specific situations. While this may inhibit the ability of the city to plan for the amount of resources which should be committed to the several assistance programs, it will also minimize the amount of resources which will be used by the programs.

Several problems which are currently affecting relocation decisions and which can be affected by city action are:

- Requesting and receiving city services
- Security of employees and property
- Parking and adequate public transportation
- Expansion needs
- Encroachment of incompatible land uses
- Lack of available land for new developments

Because of the lack of information, the "success" rate of any of the tools used to correct these problems cannot be predicted. We suggest the city concentrate on these problems because it appears that it can be more successful by trying to correct them as opposed to any others which it can affect.

(a) Requesting and Receiving City Services

The first component of any intervention program should be a method of determining what industrial needs can be fulfilled by the city and the importance of these problems to industry in a marginal context. The Mayor's Office of Economic Development could be empowered to create an ombudsman office to receive industrial requests and to ensure that a reasonable response is made by the appropriate city department. Currently, industries must request services from the department in charge of the specific area of the request. Because of the number of different agencies in the city, an industry may not know whom to contact in regard to a specific problem. In addition, some problems can be best dealt with through the combined actions of a number of departments. It would be difficult for a private firm to get the necessary cooperation.

The role of the industrial ombudsman program would be to ensure that reasonable industry requests received prompt attention from the city. In addition, it could also be a source of information concerning local markets, locations, sizes and costs of available space, and the types of services the city can provide industry.

However, to be effective the agency must have the ability to promise action and to ensure that the necessary corrective measures are then made. This would mean that the departments which provide the actual services must be responsive to the requests of the ombudsman. A program which is allowed to exist in name only will not be able to provide services effectively and may only serve to increase industry's dissatisfaction with city government.

The creation of an effective agency could improve the city's business climate. First, it would provide industry with one place where it could tell the city what types of services it needs. This would eliminate the need to trace through many agencies to determine which were responsible for the problems. Secondly, it would provide industry with a source which it knew would be there in case problems developed. This could lower the perceived importance industry gives to problems which it feels will not be corrected.

(b) Security of Employees and Property

A problem cited in several circles as being one reason for industry abandonment of certain parts of San Francisco is the lack of security available for employees and property. Security, more than any other problem, falls within the responsibilities of the city. Therefore, it, more than any other problem, is susceptible to city control. There are two facets of the problem. The first is the high amount of crime which does take place in some industrial areas, causing large losses for industries and endangering employees. In some instances, firms in these areas have trouble attracting qualified people to work in these neighborhoods. Also, industries must spend considerable time and effort maintaining security. The second factor is what industry and employees perceive the crime rate to be. This causes them to be fearful and will affect any plans for expansion and relocation. It also affects employee turnover.

Several tools can be used to make industrial areas safer. An increase in police presence should provide a greater sense of security for both employers and employees. There is a problem of determining whether increases in presence will actually result in lower crime rates, but previous studies have shown significant correlation. Improvement of lighting in industrial areas in conjunction with an increase in police presence should make the areas safer for employees and will decrease theft and vandalism.

Security on the public transportation system would also be beneficial. Several recent reports have highlighted the need for increased security on the MUNI system. Increased protection on those routes which serve the industrial areas would make use of the system safer for local employees and thereby reduce the rate of employee turnover and might also increase the size of the labor force which is willing to work in that area.

These three tools -- increased police protection, increased lighting, and safer public transportation -- cannot be used solely for one industry but rather must be utilized in programs designed to benefit entire industrial zones. However, the problem of security will not be concentrated on one site, but will cover a much larger area.

(c) Parking and Adequate Public Transportation

Most of the blue-collar labor in manufacturing and wholesaling in San Francisco live out of the city. Accessibility to a suitable labor force is a major factor in determining industrial location. None of the public transportation systems which provide commuter service from outlying communities to San Francisco provide a high level of service to the industrial areas of the city. Therefore, commuting blue-collar workers are almost required to provide their own transportation. As a result, parking space availability is a problem in many industrial areas. In comparison with suburban industrial centers, the lack of parking in industrial areas is a critical problem and may affect the relocation decisions of some businesses.

Any city action designed to relieve the parking problems faced by commuting blue-collar workers would thus be beneficial to manufacturing and wholesaling establishments. It is, however, unclear what the net effects of such policies would be on city residents. The availability of parking space might, on the one hand, be the marginal factor determining whether the establishment stays in the city or out-migrates. In such a case, there would be net benefits generated by the provision of additional parking facilities. If, on the other hand, the establishment would remain in the city even without those facilities, the policy might generate significant negative ^{effects} benefits, such as increasing the in-commuters' ability to compete with city residents for the type of jobs the city is trying to preserve. In addition, in-commuters do generate certain other negative impacts such as traffic congestion, etc. It is essential that any such problem be evaluated on a case-by-case basis only. No general parking policy should be adapted without additional study of the likely overall impacts of such policies.

While the provision of additional parking facilities might generate negative impacts, the city should improve the services offered to these areas by the MUNI system. Some of the city's industrial areas are poorly served by routes which also serve blue-collar residential areas of the city. Therefore, the transit time from residential areas to the industrial zones is inordinately long. Improved service would make these residential areas more attractive to blue-collar workers and could also reduce the parking problems currently encountered in industrial zones.

(d) Expansion Needs

A major complaint many San Francisco industries have with their present locations is a lack of room for expansion. While the city can do relatively little to correct this problem, some of the tools can be used to satisfy the expansion desires of some firms.

The city does have the power to close little used streets and alleys. This practice would enable businesses located on these streets to use them for loading and unloading purposes without having to worry about congesting local traffic.

In some instances when the benefits clearly exceed the cost the city may be able to use its powers of condemnation or eminent domain to

assist a business in obtaining a site. However, it appears that the state constitution would prohibit either low-cost sale or rental of sites obtained in this manner.

There may be a possibility that the Housing and Community Development Act of 1974 may provide funds which can be used to aid industrial expansion. However, there will be great competition among city agencies for these funds, and industrial needs will probably not receive a high priority.

The city could begin to develop a land bank by accumulating the parcels it receives through a variety of sources. Land could then be provided to industries which meet certain criteria which might include commitment to a San Francisco location, programs to encourage high participation rates by minorities, and job mobility.

The establishment of a zoning court to provide a faster method of granting variances would also increase the ability of the city to aid reasonable expansion proposals.

Unfortunately, these tools can be useful in only a small number of cases. However, some industries which cite lack of room for expansion as a reason for their relocation to the suburbs do not enlarge in the suburbs. Therefore, part of the expansionary desire is illusionary. By providing some mechanisms which could provide room for expansion within San Francisco, the city might be able to convince some industries that their expansion needs could be met within the city limits.

(e) Encroachment of Incompatible Land Uses

Historically, industrial land use has been looked upon as an undesirable neighbor or less desirable than higher value uses. In many communities it was located where it would not interfere with more desirable types of land use. Currently, however, these other types of land uses have begun to encroach upon industrial areas. The result is rent competition between industrial and commercial and office uses. In such situations, the commercial and office uses usually win because of the higher rents they are willing to pay. The result is a forced relocation of industry. In some cases, the need to move at all will lead industries out of the city.

Some of the tools open to the city may be useful in tackling this problem. The city can take a stand against allowing nonindustrial uses to develop in industrial zones. This can be done by ensuring that the zoning ordinance prohibits nonindustrial uses in industrial zones.

In some areas vertical mixed use zoning may conserve industrial rents and space. The use of the ground floor for commercial activities would allow a parcel to generate a high income while reserving space on the upper floors for industrial use.

Unlike the other problem areas, no continuing need for city services is required to implement the tools the city can use to deal with this

problem. In addition, both the cause and solution to this problem are directly under city control, meaning that city action or inaction in this area will be decisive.

(f) Lack of Available Land for New Development

Despite the overall impression that San Francisco has land available for new industrial development, very little land is available in locations where new development is desired or at prices which developers will pay for specific activities. In addition, the cost of acquiring and demolishing a vacant building, in addition to land costs, may exceed the price affordable for some activities. This is particularly true in the case of new warehouse space for which there does appear to be a potential demand.

Redevelopment has been the common approach to this problem and may, in specific cases and approached in a limited way, be useful to the city. Indeed, it appears that the India Basin project may be successful if objectives are modified to coincide with available demand for new industrial development. (See more on this in the next chapter.) For the future, just as the nature of residential redevelopment activity is shifting its focus from large scale projects involving substantial building clearance, so industrial redevelopment efforts will probably require a similar shift. Some small scale redevelopment action to eliminate buildings which are already vacant and not susceptible of reuse could make available land for new development for which there was a demand. Specific sites should be chosen for market and financial feasibility studies. If redevelopment action would prove financially beneficial to the city by increasing tax revenues, action would be justified where land or buildings would otherwise be vacant. In addition, rehabilitation of vacant industrial buildings, using the city's power to borrow money at lower interest rates, could be useful in making available buildings meeting new code requirements and in better condition for apparel manufacturers and printers, and possibly for small food processing firms. However, the focus should be on correction of existing problems and not on large scale efforts to attract new industry.

b. Employment Trends in the Major San Francisco Growth Sectors

There are three major growth sectors in the city: government, services, and FIRE. All of them are expected to grow significantly by 2000 even under the low employment projection scenario. (See Chapter II, Section D.) While few questions are raised in regard to the governmental sector, the growth of services and FIRE seem to generate concern on the part of a considerable number of city residents who question the desirability of additional significant growth of these sectors in the city. There are two major issues of concern regarding future employment growth in these sectors:

1. What are the major overall effects of growth in the FIRE and service sectors?
2. What would be the major effects of reducing the projected growth of these sectors?

While no definitive answer can be given to either question within the scope of the present study, the analysis thus far indicates several possible "impact scenarios" for each of the conditions slated in these issues.

According to the average employment projections presented in Table II-20, the FIRE sector is expected to grow by 37,300 additional jobs between 1973 and 2000. Over 95% of these jobs are expected to go to white-collar workers with clerical workers accounting for over 50% of that. While San Francisco's resident labor force has been continuously declining over the last 25 years, the absolute number of clerical workers in the labor force increased significantly. Table II-28 shows an increase of over 6000 employed resident clerical employees in the city between 1960-70. The increase of 7.3% (from 85,909 to 92,173) was the second highest of any occupational group. The largest increase was in the professional and managerial category which increased by 8.3% (from 75,106 to 81,312) during the same period. The last category which accounted for about 6.1% of FIRE employment in 1970 is expected to account for about 10% of the job increases expected to occur by 2000. Combined together, these two white-collar categories are expected to account for about 60% of the additional jobs expected to be generated by the sector's growth.

It is apparent from these trends that growth in the FIRE sector will provide most of the additional jobs for those occupation categories relevant to the resident labor force.* Though this seems to indicate a favorable effect on employment opportunities for city residents, it does not by itself mean that in the absence of sectoral growth city residents will be adversely affected to any significant degree. For if all other growth sectors were to grow as projected then their growth combined with occupational mix changes would provide more jobs than necessary for satisfying the needs of new residents in these occupational categories. In such a scenario, the overall employment effects of growth in the FIRE sector on city residents are negligible -- i.e., sectoral growth only increases the number of in-commuters. This scenario, however, is most unlikely to occur. For if the FIRE sector were to stabilize at its 1973 employment levels, this would most likely have adverse effects on the growth of other sectors, especially the business services sector. As a result other sectors would not grow as projected and less jobs than projected would be available in the professional, managerial, and clerical categories. The smaller number of jobs available will increase the competition for these jobs with in-commuters and some city residents will undoubtedly be unemployed.

*Though the number of employed city service workers increased by close to 400 between 1960 and 1970 the number of city service workers in the labor force declined at the same time by over 600. (The increase in employed residents was due to a 1000 decline in unemployment.)

The last scenario assumed a "voluntary" employment stabilization at the 1973 level. That might theoretically be the case if the 1973 level of activity could provide all the services demanded by the sector in the region. In reality, however, the sector would have to grow in order to satisfy future demand. Most of the sectoral growth (about 74% by 2000) will be due to the growth of banking activities. If this growth is restricted in San Francisco, it will have to take place elsewhere. In that case, it is likely that some activities (such as data centers, for example) would have to relocate out of the city. Some resident employees will be adversely affected. The magnitude of the impact would depend on which activities move and on their new locations. A move to South San Francisco, for example, will not affect city residents as much as a move to San Jose. An additional potential risk is that the forced move to an out of the city location may in the long run create a competitive financial center generating a new round of adverse effects.

The exact employment effects of FIRE growth on city residents depends on several factors. They include: (a) the nature of that growth, i.e., the relative growth of the activities which compose the sector, (b) future population changes and the occupational composition of the city's labor force, and (c) the growth rates of other sectors in the city.

The employment effects of constraining the projected growth rate of the sector depend on (in addition to factors (b) and (c) above) (a) the specific activities to be affected, (b) the rate of the slowdown induced by public intervention, and (c) the degree to which the various activities are interdependent, i.e., to what extent will the relocation of one activity cause the relocation of related activities.

The main purpose of the analysis presented above is to present the complexity of evaluating the impacts of lack of growth or impacts generated by restrictive growth policies. The impact might be very minor in the case of a gradual and "natural" slowdown or severe in the case of a sudden artificial restriction on growth. An analysis of the impacts associated with lower or restricted growth of the service sector would produce similar results.

Based on our analysis, it would be risky to adapt any severe restrictions on the growth of these sectors in which the city has its major comparative and competitive advantage, i.e., the FIRE and Service sectors. The emphasis here is on physical growth restrictions or policies which will have a very large cost impact on these sectors. The mere imposition of an additional moderate tax, if it were legal, would have only minor effects on growth due to the significant competitive advantage of these sectors in San Francisco.

c. Additional Basic Issues of Public Concern

The issues dealt with in this section were selected as representing the major public concerns regarding past and present trends in the city's economic structure. These issues are the manifestations of two more fundamental, interrelated issues shared by many other urban centers. They are:

1. Which policy tools would be most effective for reducing the relatively high unemployment rate of resident population?
2. What are the net impacts of in-commuters on the city and what are the policy tools which could be effective in reducing the negative impact of in-commuters (traffic congestion, etc.)?

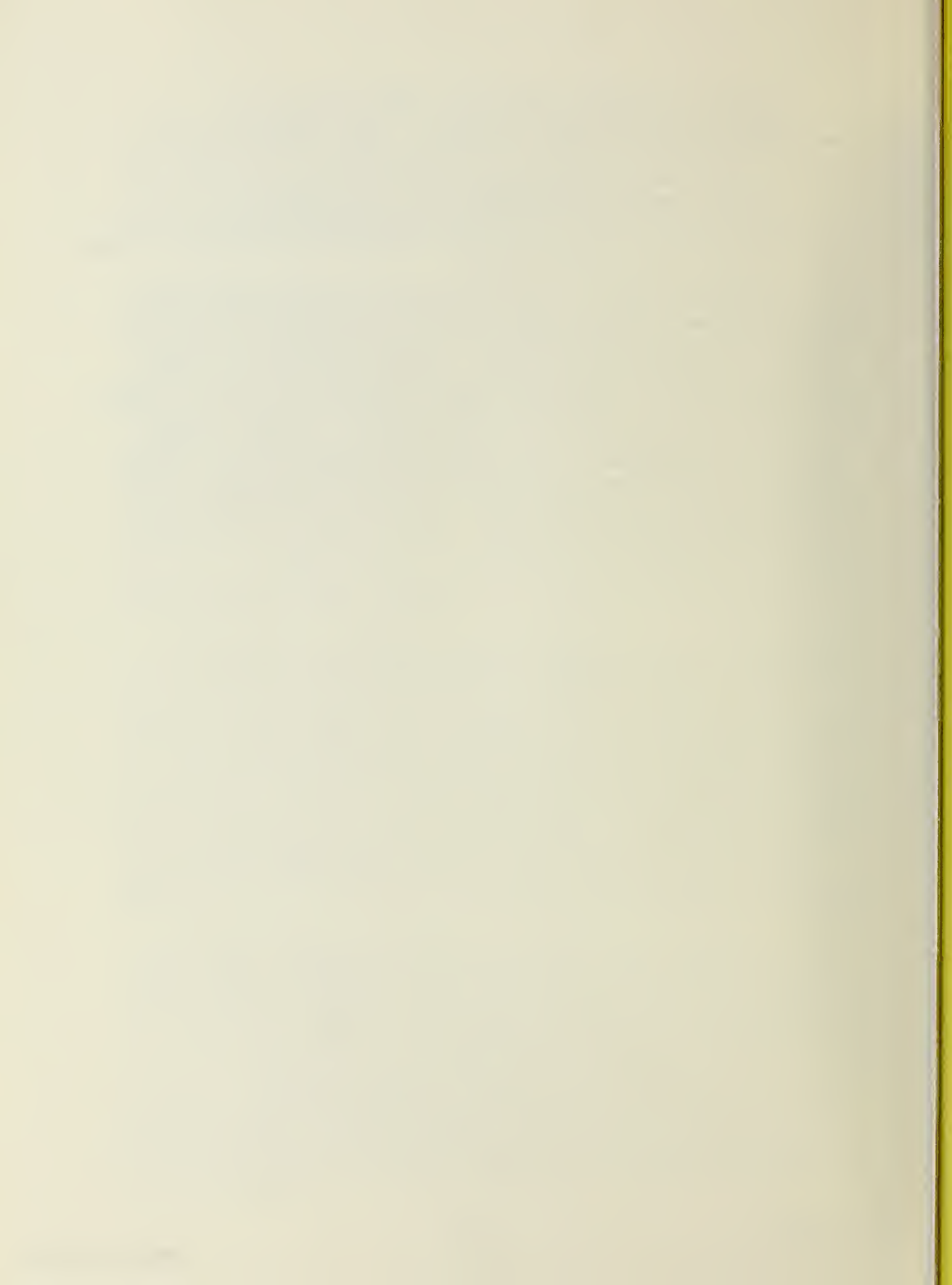
The first issue is a direct result of continuous population shifts across the nation. Urban centers' population declined primarily as the result of the out-migration of the middle and upper-middle income groups. While this trend was taking place, the semi-skilled, unskilled, and unemployed continued to move to the cities. While our study did not include a detailed analysis of the specific occupation characteristics, it is apparent that there are significant differences in the composition of the major occupation categories between city residents and noncity residents. That is to say, the composition by income and skill levels of resident craftspersons is different from that of nonresident craftspersons. Such differences in skill levels are undoubtedly responsible to a large degree for the higher rate of unemployment of resident craftspersons (7.38% in 1960 and 8.51% in 1970) in comparison to that of craftspersons living in the rest of the SMSA (5.92% in 1960 and 5.59% in 1970). The mere increase in the number of jobs available in certain occupational groups will have only limited success in reducing the unemployment rate of city residents.

Though we have recommended that the city adopt low cost policies to lower the rate of decline of manufacturing and wholesale trade in the city, we have also shown that merely increasing the number of jobs available in these sectors will have only a very limited impact on reducing the unemployment rate of residents. The solution lies in treating the socioeconomic causes of resident unemployment rather than investing in policies which will benefit primarily out of city residents. It is most unlikely that the city itself, with the limited resources and intervention tools available, can solve this problem. The question is: given these limitations, what can and should be done? Our study, which while not directly oriented toward that question, contributed to narrowing down the options by showing primarily what should not be done. A more specific answer will require an additional study focusing on this crucial issue.

Population shifts also affected the economic structure of the city (Chapter II). The growth of the noncentral city urban areas did not, however, reduce the absolute importance of urban centers, i.e., most cities continued to grow in terms of overall employment opportunities. The net result has been the ever increasing share of the in-commuting labor force in the city. The increase in the employment of noncity residents has some negative as well as some positive impacts on city residents. In-commuting generates negative impacts in terms of traffic congestion, increased competition for available jobs with qualified city residents, demand for public services, etc. On the positive side, in-commuters supply labor and skills without which many activities could not grow or even exist in the city, thus creating employment opportunities for city residents.

In addition, in-commuters spend part of their income in San Francisco and by so doing provide income to residents. While the city will on balance be much worse off without any in-commuters, it is not clear what is the optimal level of in-commuters from the city's point of view. The question is not whether in-commuting as a whole is desirable but rather what would be the net impacts of a change in the level of in-commutation and what can the city do to increase the benefits of out-of-the-city workers and reduce the cost of in-commutation.

Here again, we can only raise the issues. Any meaningful answers will have to await further study. One of the "solutions" is to introduce a wage or income tax, the revenues of which will be used to improve services to residents and to offset a property tax reduction. Proper planning can produce a negligible net tax effect on city residents while improving services. This would increase the city's attraction of residents who may then increase the city's tax base. Such a tax will require a legislative change in the state's constitution. It is doubtful whether that can be accomplished. A strong case can, however, be made to demand alternative compensation for the city if the tax is not allowed. The benefits derived by nonresidents from the economic viability of the city are considerable; it is only equitable that they share in the costs of producing these benefits.





VI. ALTERNATIVE STRATEGIES FOR THE CITY'S MAJOR COMMERCIAL AND INDUSTRIAL DISTRICTS

In the development of the Commerce and Industry Element of the city's Comprehensive Plan, the Department of City Planning's major responsibility lies in the area of land use, environmental, and physical development strategies. This chapter is concerned with the evaluation of alternative policies and programs of this type. The development of policies for the Comprehensive Plan must take into consideration the economic structure of the city, broad economic objectives, and the availability of other strategies to attain them. The last chapter was partly concerned with strategies having to do with fiscal policy, services to business, job training, and other program areas which do not have a major land use component. These are of concern to the city as a whole but will probably not come within the scope of the planning department's responsibilities.

As previous chapters have indicated, the physical environment and land use policies are not among the major factors affecting industrial locational decisions or changes in employment in the city. However, there are some instances in which land use policies can have a direct effect. In addition, projected changes in the economic structure of the city raise issues regarding the future use and occupancy of different areas of the city, potential conflicts between economic growth and other objectives of the Comprehensive Plan, and short-term inefficiency in the use of land in San Francisco. This chapter is concerned with alternative strategies to address these issues.

Possible environmental objectives which do not directly influence economic change were not within the scope of this study, although the implications of projected changes on previously adopted policies of the city are noted where necessary. For instance, this chapter does not address issues, such as whether or not a limitation on the height of buildings in downtown San Francisco would be desirable per se unless such a limitation would be expected to affect growth of employment.

A. MAJOR ISSUES

Alternative strategies for San Francisco's major commercial and industrial districts must be considered within the context of major issues raised by projections of employment and space and land requirements, site and locational preferences of industrial firms, and evaluation of the desirability and feasibility methods of public intervention. These factors have been set forth in previous chapters.

The major land use issues or problems can be summarized as follows:

1. Increasing building vacancies and reduction in demand for space for manufacturing in the city, chiefly south of China Basin Channel and east of the James Lick Freeway, resulting in unused buildings and vacant land.

2. Potential conflict between expansion of office development (and demand for related parking) in South of Market and the availability of building space suitable for manufacturing, wholesaling, and some business and repair services, possibly causing a lower level of employment in manufacturing than might otherwise occur.
3. A relatively low level of demand for new retail space to serve new office employment so that provision of such space on the ground floors of new office buildings is not likely.
4. High demand for new parking space to accommodate employees, potentially causing very high levels of congestion on Downtown and South of Market streets which is disadvantageous to industry.
5. A potential increase in demand for new warehousing space in single-story structures, which can only be realized if reasonably inexpensive vacant land can be made available.
6. Significant new demand for office and institutional, office-type space in the city's residential areas, and potential encroachment on residential use.
7. A high probability of abandonment of relatively specialized industrial space, which could have an undesirable impact on the environment of industrial areas.
8. A low likelihood of attraction of any new major manufacturing activity to the city to occupy available or to-be-available industrial land.

B. GENERAL TYPES OF STRATEGIES AVAILABLE TO THE CITY

Land use strategies and programs which the city might pursue to address the issues presented above can be grouped into the following general types in accordance with the nature of the issue and the purpose of the strategy.

1. Support of Existing Land Uses

This type of strategy would involve policies and programs designed to maintain current land use patterns in particular areas in order to ensure the continued viability of specific economic activities or to prevent conflicts among land uses which would be detrimental either to the city's economy or to other objectives (e.g., maintenance of the city's residential stock). Types of policies and programs which may be grouped under this category include:

- Improvement of the physical environment of areas where deterioration is threatening continued occupancy by firms which would ordinarily not relocate.
- Containment of the growth of expanding sectors where such growth infringes upon the viability or continued existence of industries which cannot compete for space under existing market conditions and would otherwise be forced out of the city.
- Elimination of current conflicts between land uses or conditions which reduce the efficiency of industrial or commercial operations or create an environment unattractive to employers or employees.
- Accommodation of new demand for space in a manner which reinforces existing land use patterns and strengthens agglomeration effects on particular sectors.

2. Reuse of Existing Resources

This general type of strategy would involve policies and programs designed to capitalize on the city's assets for economic growth or to make optimal use of the city's scarce land for various objectives. This category includes policies and programs designed for the following:

- Maintenance and rehabilitation of existing industrial buildings abandoned by specific sectors or firms, by other industries or firms which depend on the availability of older buildings.
- Conversion of land abandoned by industry for other purposes for which a demand exists.
- Demolition of abandoned buildings for which no economic use exists to provide land for other uses.

3. Relocation of Existing Land Uses

This general type of strategy would involve direct public action intended in most cases to assist or force the relocation of specific activities or land uses from one area to another in order to eliminate land use conflicts, to make available land for other uses, or to prevent out-migration of firms from the city. Relevant programs and policies could include:

- Redevelopment of land currently in mixed industrial and residential use for either industrial or residential use, and relocation of one of the uses to another area.

- Rezoning to prohibit specific uses in existing industrial areas which have a detrimental impact on other uses, and the relocation of such uses to other areas where land is available, or outside the city.
- Assistance to economic activities forced to relocate by private redevelopment or market activity in relocating suitable areas and buildings.

4. Other Considerations

During the course of this study, a category of strategies related to the "attraction" of new economic activities was also considered. Because very little vacant land actually exists in San Francisco for major new industrial activities, this category of actions can, in the San Francisco context, be appropriately considered under the "reuse" category. Generally, in San Francisco, accommodation of any new economic activity or land use must occur through the reuse of land or buildings currently in some other use. In addition, the prior economic analysis has indicated that attraction of new industries is not likely to be feasible at any reasonable cost.

C. CRITERIA FOR THE EVALUATION OF ALTERNATIVE STRATEGIES, POLICIES, AND PROGRAMS IN THE CITY'S MAJOR INDUSTRIAL AND COMMERCIAL DISTRICTS

Application of alternative strategies to specific industrial and commercial districts of the city, and the evaluation of these strategies, require the testing of alternatives against some criteria. These criteria must be broad enough to cover the range of potential problems involved, the available policies and programs, and broad objectives of the city.

1. Relevance to the Problem Presented

Of obvious importance is the relevance of a particular type of strategy to the land use issues which exist in a particular area. For example, strategies involving "reuse" are generally not relevant to the Downtown area because the demand for space is so intense that no need for public intervention to reuse land or buildings is necessary.

2. Minimum Adverse Impact on Growth in Employment Opportunities or Advantageous Impact on Growth in Employment

It is generally assumed that strategies involving land use changes in the city's industrial and commercial districts should be designed to enhance employment opportunities, especially for city residents, rather than to reduce them. It is also assumed that opportunities for an increase in employment opportunities will be sought, at least where there is no major cost to the city.

3. A Reduction in the Projected Rate of Decline of Employment in Manufacturing and Other Industrial Sectors of the Economy, Where Possible and Specifically, Where This Can Be Achieved without Adverse Impact on Growth in Other Employment

In the context of the economic projections presented in Chapter II, it is assumed desirable to preserve employment in existing manufacturing and to encourage manufacturing activity, where actions which can effect these changes pose no threat to the growth of other sectors and where costs of action are not likely to exceed its benefits. A more difficult question would be presented if the criterion applied in such a way as to preserve specific types of jobs at the expense of others.

4. Use of Land or Buildings Which Would Otherwise be Vacant for Some Acceptable Economic Activity or Other Purpose

Since vacant land contributes little to the city's fiscal base, and since San Francisco's available land is very limited, it is considered desirable to undertake actions which encourage active use of land or buildings which are now or will in the future be vacant. Even if use of vacant land and buildings has no significant impact on employment, any environmentally acceptable use is considered more desirable than vacancy because of the increased revenues to the city.

5. Minimum Costs and Risks of Adverse Impacts to Achieve a Specific Objective

This criterion simply specifies that the application of strategies to specific areas of the city should be made with regard to their cost-effectiveness. Since precise costs cannot be specified without case studies, the term "risks" is used to include the probability of adverse economic effects.

D. ALTERNATIVE STRATEGIES FOR THE MAJOR INDUSTRIAL AND COMMERCIAL DISTRICTS

1. Northeast District

a. The Issues

The city's Northern Waterfront Plan calls for phasing out nonmaritime industrial use in the Northern Waterfront area. Projected changes in employment and space use indicate that expanded demand for office, retail, hotel, and parking space will, in fact, probably accelerate a reduction in industrial activities still remaining in that area. Although a decline in manufacturing activity would probably occur in any event, some premature relocations may be forced by 1985 due to expansion of other uses. As a result, employment in manufacturing in this area is likely to decline more rapidly than has been projected.

Displacement of existing manufacturers in the area is most likely to result in the relocation of some outside of the city, rather than in the China Basin or other southern industrial districts, as called for by the Northern Waterfront Plan. If relocations are to the East Bay, a secondary result may be the loss of clients to the port.

b. Alternative Strategies

Two possible strategies are available to the city if it wishes to minimize or retard the loss of manufacturing jobs and possible port business: (1) support of existing manufacturing through containment of the growth of office, hotel, and retail uses, and (2) assistance in relocating existing manufacturing activities to other areas in the city where land or appropriate buildings are available.

c. Evaluation

The first strategy would be contrary to existing city policy and would probably, at best, slow the rate of decline in manufacturing employment in the area rather than halt it. Some manufacturing activities will probably be forced to move in any event if the Belt Line Railroad is relocated or removed, as called for by the Northern Waterfront Plan.

Due to the fact that this area offers prime potential for increased retail and entertainment activity in the city, any strategy directed at reducing such development in order to preserve manufacturing could prove to be at the expense of potential retail trade and services employment. Certain types of hotel and retail development in this area would probably not locate elsewhere in the city. The demand for office space, on the other hand, could undoubtedly be satisfied in other areas, either in Downtown or in South of Market. San Francisco's attraction to the FIRE and business services sectors is great enough that failure to obtain a site in this area is unlikely to slow the rate of growth in office employment. Therefore, the city could undertake to reduce the pressure for relocation of manufacturing by reducing the allowable area for office development, if it desires to change its policies with respect to future land use in this area.

The second alternative, assistance in relocation, can be implemented consistent with current city policy and without limiting expansion of other uses in this area. Although inadequate information is available to determine the likelihood of success of this strategy with respect to specific firms, some statements can be made as to those activities which may or may not be successfully relocated. Major manufacturers in the area -- particularly those involved in food processing -- are not likely to choose to relocate within the city unless buildings specifically suiting their needs are already available at low prices. Since the requirements of some firms are quite specialized, this is not likely to be the case. If forced to acquire land and construct new space, they will have a strong tendency to relocate to areas having lower land costs, lower property taxes, and higher industrial amenities. Ties to the port can be maintained from a location in South San Francisco; many firms can be served in the East Bay through the Port of Oakland.

Relocation assistance could probably be more effective in keeping small firms within the city if existing building space can be found. Suitable industrial space will generally be available in the South of

Market, Mission, and Potrero districts. The most likely area of relocation for port-related or port-dependent activities would be in the eastern portion of South of Market or in the Potrero district.

In order to enhance the probabilities of in-city relocation, the city could do the following:

- Identify firms likely to be displaced by expanding activity in advance of that occurrence.
- Determine the precise requirements for new space.
- Identify and maintain a running inventory of available building space for lease or sale in the potential receptor areas.
- Institute policies to preserve suitable industrial space.
- Make known the willingness of the city to assist in relocation.
- Offer financial assistance in moving. (As previously indicated in Chapter V, it is by no means certain that benefits to the city from attempts to preserve manufacturing employment will justify any significant expenditure of funds.)

No major expenditure of funds would be appropriate to provide assistance for relocation of firms from this area. Generally those who would relocate outside the city are not likely to be influenced by payment of moving expenses or even of subsidization of land or building costs. In some cases the port can offer land at reduced rates in the Southern Waterfront area, but prior efforts in this direction have not shown that they will be successful.

d. Recommendation

Due to the attraction of this area for nonindustrial use, we recommend that the city continue to implement its land use policies contained in the Northern Waterfront Plan. In order to minimize avoidable losses of employment in manufacturing and to utilize suitable available space elsewhere in the city, the city should assist firms having to relocate. Due to the small number of firms accounting for the majority of manufacturing employment in the Northern Waterfront, it would be feasible, at minimal cost, to make contact with them, identify their needs, and determine whether they can be relocated in the city.

2. Downtown District (North of Market)

a. The Issues

(1) Office Space Demand. Net new demand for office space allocated to this area is estimated to average 400,000 square feet per year until 1985, with the long-term projections ranging from 250,000-340,000 sq. ft. per year. Recent rates of construction have been much higher, resulting in a higher, though tolerable, vacancy rate.* Demand prior to 1985 may actually be somewhat higher and gross new construction will exceed net new demand by about 20%, due to losses in the inventory during office development. However, continuation of the current rate of construction could easily result in increasing vacancies in existing buildings. This can in turn cause excessive demolition of existing space in anticipation of new construction and/or a potential short-term "bust" in the office market. Such short-term occurrences are common in office construction even if, as in San Francisco, the long-term demand calls for a substantial augmentation of total office space. It is possible that a higher proportion of citywide demand will be satisfied in the Downtown (and South of Market and Northeast districts) than is projected, but this is unlikely given the large component of institutional demand.

Wide fluctuations in office building activity in Downtown can have several undesirable effects: (a) long delays between demolition of existing structures and construction of new space, probably resulting in increased interim parking lot use, (b) fluctuations in employment in contract construction, (c) fluctuations in city property tax revenues from new office construction, (d) hardship for owners of buildings with high vacancies, and (e) premature elimination of inexpensive office space needed by those who cannot afford new space. It may well be as important for the city to exercise some control over the rate of new office construction as over its eventual magnitude in particular locations. Under current zoning only a limit on the ultimate amount of space which can be built is imposed; there is no control over the timing of increments to the inventory, given the relatively high capacity afforded by current zoning.

The maximum net increase in office space projected for the Downtown (north of Market) amounts to about 9.2 million square feet by the year 2000, to be built chiefly in the financial and administrative district, but also in the Civic Center area. An additional maximum net increase of 7.1 million square feet is expected to be required in the South of Market area by the year 2000.

According to estimates by the Department of City Planning, the financial and administrative district (the C-3-0 zoning district), which allows the highest floor area ratios in the city, has a theoretical capacity to accommodate an additional 30+ million sq. ft. of new office space.** This

*City of San Francisco, Department of City Planning, "Office Space and Employment Trends," (Draft), January 1974.

**Ibid. See also City of San Francisco, Department of City Planning, "Downtown Zoning Study."

area does not include the Yerba Buena Center Redevelopment Project area. The project area has the capacity to accommodate an additional 7 million sq. ft. of office space. Additional capacity is available in the C-3-R, C-3-G, and C-3-S districts. The total theoretical capacity of the C-3-0 zone and the Yerba Buena Center area together is about 37 million sq. ft. of new office space, compared to an estimated maximum demand of 16.3 million sq. ft. from 1973 to the year 2000 in the entire Downtown and South of Market districts. In 1974 an additional 3.3 million sq. ft. of space were brought onto the market in these areas. In 1975 an additional 1.6 million sq. ft. are expected to be added by the Southern Pacific buildings. Construction of Embarcadero No. 3 is expected to add 780,000 sq. ft. in 1976.

Thus, almost 5.7 million sq. ft. are being added in the first three years of the projection period, leaving only 12.7 million sq. ft. in gross new office construction for the remaining 24 years. In accordance with our medium-level projections for 1985, no demand would remain available for additional construction in these areas after 1976 until 1985. Since marketing of some land in the Yerba Buena Center is already assured, it appears that medium-level projections for 1985 do not adequately express the level of demand at this time. It is more likely that for the next few years demand will grow at a rate consistent with the high projection. However, even given the high rate of employment growth in offices projected to the year 2000, it clearly appears that available capacity far exceeds the probable demand for new office space.

In order for Yerba Buena Center land to be marketed for office construction at planned densities, it would have to account for at least 54% of total new demand for office space within the combined Downtown and South of Market areas unless additional demand is diverted from other areas. This requirement suggests the likelihood that construction in the project area will proceed much more slowly than anticipated, despite somewhat lower land prices than in other areas, unless action is taken to divert additional demand from other area. This issue is given additional consideration below in the discussion of strategies applicable to South of Market. Suffice it to say here that even if actual capacity in the C-3-0 district is only half the theoretical capacity, total capacity of the C-3-0 district plus YBC exceeds the maximum likely demand for new office space in the Downtown and South of Market districts by 70%.

These facts suggest the possible desirability of restraining growth north of Market Street in order to accommodate new growth on land already prepared for development in the YBC project area. This strategy would reduce the necessity for demolition and reconstruction in Downtown and maximize the fiscal benefits derived from construction of new buildings on vacant land. (The relationship of this issue to preservation of manufacturing is considered in the discussion of South of Market.)

Projected demand for new parking to accommodate increased employment for Downtown heightens this issue since it is more difficult, more costly, and less desirable, in terms of potential congestion, to provide additional parking for employees in the Downtown district. Potential parking demand

for Downtown would require (in six-story garages) as much land as new office development. Containment of growth in office development in this area through a change in zoning would reduce parking requirements and therefore land required to be redeveloped for parking and office development. The effect would be to shift new office development and supporting parking to the South of Market area and into the YBC project area. Another alternative means of reducing localized parking demand is to provide remote parking and shuttle transit services, but this would not necessarily have any impact on the location of new office development.

(2) Retail Space Demand. The relatively small demand for net new retail space indicates that very little ground floor space in new office construction is likely to include retail uses, unless retail use is subsidized by office uses above. Apart from employee-related retail uses, such as eating and drinking places, downtown retailers benefit from agglomeration effects -- that is, a relatively compact area of intensive retail use where shoppers can reach different stores within an easy walking distance. This tendency is increased by the high proportion of downtown retail trade attributable to those who do not work downtown -- i.e., visitors and nonresident and resident shoppers. This means that very little new retail use is likely to be developed in the main core of new office development.

Attempts to diffuse retail space throughout the office core could occur at the expense of the retail district and reduce the overall potential of downtown retailing. The current policy of the city, as expressed in the provisions pertaining to the C-3-R zoning district, is to encourage continued concentration of retailing around Union Square and the Powell-Market corner. This is consistent with the composition and extent of projected new demand. Additional retail space or extension of requirements contained in the C-3-R zone to the C-3-0 zone relating to maintenance of ground floor retail use would only be justified in connection with an increase in downtown housing or decentralization of hotel construction. An increase in the number of downtown residents would have a significant impact on the demand for downtown retail space. In addition, tourists -- particularly convention-goers and vacationers -- spend about six times the amount spent by office employees on retail goods and services, other than spending at restaurants and bars.* Thus, the location of hotels in or near the office development core, such as the recent construction of the Hyatt Regency Hotel in the financial and administrative district, may expand the demand for nearby retail space.

*Arthur D. Little, Inc., "Yerba Buena Center Public Facilities and Private Development," Draft Environmental Impact Report, citing the San Francisco Convention and Visitor Study; and the San Francisco Planning and Urban Renewal Association's "Impact of Intensive High-rise Development on San Francisco."

(3) Parking Space Demand. Reference has already been made to parking requirements related to employment growth, increased retailing activity, and hotel uses in the Downtown. Satisfaction of new parking demand (if it is to be satisfied in the area) at less than maximum feasible densities would result in the occupancy of significant amounts of land for parking which might otherwise be put to other uses with a higher value and higher employment per acre. Without controls, parking lots are likely to occur as interim uses, remaining in such use for a considerable time if office development slows. Demolition of buildings replaced only by parking lots can result in loss of property tax revenue to the city and reduction in available space needed at lower rentals for uses such as apparel manufacturing, printing, and some professional services. The city may wish to ensure that whatever parking demand is met in the area is met at the highest densities possible.

The Department of City Planning has recently approved a proposed ordinance to control parking lots temporarily in the Downtown and South of Market areas. Permanent controls may be needed to prevent proliferation of parking lots, to discourage premature building demolition, and to reduce overall amounts of parking provided in the Downtown area. Some of the office demand projected to be satisfied outside the Downtown district could probably be accommodated in older, lower-rent buildings within it if they are retained. If it is desired to reduce the pressure for new office construction outside the Downtown area, some controls on parking increases might assist in achieving such a purpose. There is no evidence, however, that constraints on new parking in Downtown will, in themselves, reduce demand for new office space.

b. Alternative Strategies

The nonenvironmental issues presented by projected growth in downtown employment are complex but none of them involves serious problems of conflict between the growth of employment in specific sectors at the expense of others. The issues relate primarily to matters involving the rationalization of expected growth in office space to avoid fluctuations in development activity or to concentrate new development in specific areas. There are some potential conflicts between different types of users within the same economic sectors -- such as low-rent office users versus high-rent office users.

Existing city policies are generally consistent with projected growth in employment in the Downtown area and with obtaining the maximum potential expansion of retail space (and employment).

Our analysis does indicate that Downtown is substantially overzoned in terms of likely ultimate development. If a compact and high-intensity office core area is desired, development potential should be lowered outside this area. If Yerba Buena Center is to become a major office center, then some reduction in allowable development in or the size of the C-3-0 district would be appropriate. If more control over the rate of growth is desired, overall development potential should be reduced and channeled.

Current policies encouraging concentration of retail activity are consistent with the findings regarding probable growth in retail space and the benefits of agglomeration of retail outlets. It may be desirable, in order to encourage new retail space at ground floor level throughout the office core and to increase retail trade employment, to encourage the development of additional residential uses and hotels in the office core. Such developments would increase employment in retail trade in the city as a whole and could potentially reduce commutation (although total parking requirements could well be greater due to residential parking demand).

If increased parking in the Downtown is unacceptable in terms of increased traffic congestion and land use patterns, either a diversion or containment of office growth, increase in transit usage, or provision of remote parking will be required.

c. Evaluation

Downtown San Francisco's comparative advantage as a location for the FIRE and business services sectors is sufficiently great that a considerable amount of latitude is present in channeling and controlling such growth. It is very unlikely that constraints on growth in a particular part of San Francisco's business center would result in actual losses of potential employment in those sectors, so long as there was room for accommodation with adjacent areas served by public transit. Whatever environmental objectives the city has with respect to the Downtown can probably be achieved without loss of potential employment in office-using sectors. Accommodation of new employment in new office development at high densities has the benefit of avoiding encroachment on less competitive uses. Given the commitment of the city to Yerba Buena Center and the availability of land for development there, as well as in the Golden Gateway project area, it would be desirable to constrain development in other areas unless the future use of YBC land is to change. Such a strategy is more relevant from an economic point of view, however, to the future of South of Market than to the Downtown district.

Any attempt to require ground floor retailing in all new office buildings in the Downtown office core is likely to be unsuccessful or detrimental to the viability of retailing in the retail district, unless additional downtown housing is developed. Successful marketing of new housing in Downtown could lead to demand for a much larger increase in retail use than is projected and, of course, to additional employment in retailing. Prospects for downtown retailing are not particularly good unless there is a relatively high rate of growth in new downtown employment and tourism or an increase in the population of the city, particularly downtown population.

It could be desirable, if downtown retailing is to be increased, to encourage the use of a portion of floor space allowed under the Planning Code in the C-3-0 and adjacent zones for residential use in combined office-residential buildings, such as Fox Plaza, or in complexes including housing and offices, such as in the Golden Gateway project.

d. Recommendations

The city should maintain its current policy of encouraging retail uses to concentrate within the retail district.

Further attention should be given to the possibility of increased residential development in the Downtown area, in order to increase retail trade and retail trade employment, and possibly to reduce commuter parking demand.

Since substantial increases in downtown traffic congestion could be inimical to realization of the area's full potential for retailing, continuation of controls over commuter parking will prove to be necessary. Unless the city is willing to tolerate increasing parking lots in the Downtown, special controls over parking lots will be required over the long term, similar to the controls recently recommended to the Board of Supervisors. (Possibilities for providing remote parking are discussed below in connection with the future of the southern industrial areas.)

The following discussion of the South of Market area will include recommendations regarding projected office growth.

3. South of Market

a. The Issues

(1) Office and Parking Demand vs. Industrial Space. This district provides the most favorable condition of any district to continuance of those manufacturing, wholesaling, and warehousing activities which have a natural inclination to remain in San Francisco. There is a large reservoir of generalized industrial space available for lease in varying quantities, access to suppliers, repair services, and customers, and access to freeways and delivery services. The area is particularly attractive to small firms and these are most likely to remain and survive in the city if space is available. Elimination or severe reductions in the inventory of older industrial space in this area (estimated at 8-10 million square feet) is very likely to accelerate declines in employment in manufacturing and reduce the city's potential for attraction of new, small firms in the few manufacturing sectors with potential for expansion. Thus, office development in the South of Market area can conflict with maintenance of feasible manufacturing, wholesaling, and warehousing activities in the city.

Ultimately, the expected decline of some key sectors -- particularly food processing -- is expected to make available land for other use. Removal of buildings in that industry will not jeopardize the stability of other sectors since buildings are typically too specialized for other users. However, food processing activities are generally located in parts of the district which are not likely to experience immediate pressures for new office development. New office growth is expected to occur chiefly to the east of Third Street, from Market to Folsom, and along the Market-Mission corridor from Third to Eleventh. Office development east of Third will ultimately force relocation of some large apparel manufacturers.

New parking demand generated by growth in office employment can, if not satisfied on relatively little land in multi-story garages, exert pressure for the removal of small-scale industrial space from Mission Street to Brannan, thereby having the same effect on the industrial space inventory as new office construction. Low-rise and low-rental industrial buildings are particularly susceptible to demolition and removal for parking lot uses. Parking demand can increase to the point where profits from parking use exceed those obtained from building rentals.

In theory adequate vacant land and land in parking lot use, including land in the YBC project area, can accommodate projected requirements at least through 1985. However, this land is not found in those areas where most office development is tending to occur. If displacement of existing manufacturing activities is to be minimized, channeling of new development into existing available land and reduction of land required to accommodate parking demand will be required.

(2) Retail space. There appears to be a surplus of scattered retail space in this district at present, despite a potential demand for more concentrated space. The Market-Mission corridor, particularly centered around Fifth Street, has increasing potential for retail use, while demand is expected to decline in the more southerly areas. As in Downtown, concentration of new retail development near the BART-Muni stations and in a southerly extension of the North of Market retail district is expected to make for more viable retailing. This is already city policy, as expressed in the Planning Code. As in the case of Downtown, provision of ground floor retail use in new office developments is not likely to be feasible without an increase in downtown resident population. Most of the projected new demand for retail space will probably be absorbed in the Yerba Buena Center, in connection with new tourist activity.

(3) Yerba Buena Center. As previously indicated, the marketability of land in YBC is likely to proceed much more slowly than planned, unless potential for new development is reduced north of Market and east of Third Street. The lower land prices are likely to be most attractive for office activities which can locate farther from the office core without any disadvantage to their operations, such as data centers and utility and communications buildings. Based on current zoning and projected demand, it appears that full development of land in YBC allocated to offices might not occur until the year 2000.

b. Alternative Strategies

If the city is to enhance its attractiveness to continued manufacturing, and thereby retard the decline in overall employment in manufacturing, maintenance of South of Market's inventory of industrial space will be critical. A strategy of support for existing land uses (that is, buildings and uses in general, not necessarily specific firms or industries) will be required in order to permit continuing industrial use. The focus of maintenance efforts would be on general industrial space, rather than on specialized manufacturing plants, such as breweries, coffee roasting plants, and other food processing plants. This support strategy consists chiefly of efforts to prevent

encroachment by office development and related parking. Ancillary support could be provided by efforts at a reduction of traffic congestion and improvement in truck loading facilities.

Another alternative strategy is to attempt to relocate existing industrial activities from areas under pressure for new development to those experiencing far less pressure, relocating them either into other areas or within the district. For some activities, such as printing and apparel manufacturing, relocation within the area or into the Mission and Potrero districts may be possible. Some machinery and metal products operations may also be accommodated in these areas. To the extent that relocation can be handled successfully, it would accomplish reuse of buildings in other areas abandoned by existing manufacturing and warehousing firms.

The prospective slow marketing of land in YBC suggests a possible strategy of using land planned for office development (and for the sports arena) for other purposes -- possibly residential development. Increased residential development in this area could expand employment in retail trade and personal services and increase tax revenues if the land could be marketed rapidly for such purposes.

c. Evaluation

Due to the lack of large quantities of similar industrial building space available in other districts, relocation to other areas is not likely to be effective with respect to many small firms and industrial activities which choose to locate in South of Market. Similar space is available only in small parts of the Mission, Potrero, and Northern Bayshore areas. Since few activities located in South of Market can afford the cost of new space, they would have to be accommodated in existing buildings. Relocation into the Mission district could potentially conflict with other objectives for that area -- particularly with respect to new housing development.

Given the amount of land available for new office development and the possibility of meeting parking demand at high floor area ratios, there is every reason to believe that South of Market's useful inventory of industrial space can be preserved without restraining growth of office employment. Changes in zoning would be required to prevent encroachment of new office development into the more southerly areas of the district, zoned C-3-S and M-1, where low land prices encourage some new development (particularly utilities and government buildings). In addition, it may be desirable to limit future office development east of Third Street in the near future because a significant amount of manufacturing employment is concentrated in that area. Such a strategy would be consistent with more rapid development of the YBC area as well.

Parking demand poses a threat to continued industrial use, and increasing congestion levels could reduce the efficiency of wholesaling and manufacturing activities in the area. Therefore a continuation of the proposed interim parking lot controls on a permanent basis may be necessary, joined

with increased encouragement of multi-level parking garages on land now in parking lot use or vacant. The alternative is to provide remote parking and shuttle services or to attempt a substantial increase in transit usage.

d. Recommendations

The Department of City Planning should give serious consideration to prevention of office development in the C-3-S and M-1 districts. Lowering permissible floor area ratios in the C-3-0 district should also be evaluated with a view toward accommodating expected office development through 1985 in the YBC project area.

The planning department and the Redevelopment Agency should, in connection with the above recommendation, consider the advisability and possibility of accommodating new residential development, along with new office development, in the YBC project area, both to enhance downtown retail trade employment and to market land more rapidly.

Parking lots, garages, and service stations should be controlled on a permanent basis to prevent the demolition of industrial space in South of Market induced by parking and auto service demand. The city should encourage satisfaction of parking demand intended to be satisfied in South of Market in commercial multi-story garages.

4. Potrero District

a. The Issues

A large amount of land in open-air use is found in this area and building vacancies are relatively high. Although low-intensity use is not necessarily undesirable, it is an indication of slackened demand. A continuing increase in vacancies in manufacturing and warehousing space is likely, although there is potential demand for new modern warehouse space for wholesalers serving downtown business or receiving or shipping goods through the port. The prospect for this area over the next 10 years is for relative stability in overall land use if new warehousing is developed but for additional vacant land if it is not. Over the long term there is some potential for increased use for construction of utility and communications service plants and shops. In sum, however, the future of the area is very uncertain based on existing trends; the mixed character of uses in the area may prove to be disadvantageous to expansion of manufacturing or trucking and warehousing on the one hand, while its proximity to Downtown and the availability of large amounts of underutilized land may make possible new development for warehousing. Occupancy of some abandoned industrial space by firms relocating from South of Market or the Mission district is possible, depending on city policies with respect to those areas.

b. Alternative Strategies

Given the relative and prospective underutilization of land and buildings in this area, one possible strategy would focus on reuse of land and buildings for industrial or nonindustrial use. This strategy could consist of several alternative types of action: clearance and redevelopment for new construction for either industrial or nonindustrial purposes or both, building maintenance and rehabilitation for industrial uses or office uses, or development of parking related to downtown employment.

The other alternative is to attempt to maintain the nature of land uses currently in the area by making some environmental improvements, seeking new users for existing vacant buildings, or simply leaving the area alone. Available buildings in the area could provide for industries tending to locate in the Mission, such as truck and auto rental yards, laundry and dry-cleaning plants, and machinery shops, if these uses are forced to relocate.

c. Evaluation

Strategies applicable to this area must be evaluated in part relative to programs which might be undertaken in other areas. If severe losses in the industrial space inventory occur in the South of Market, maintenance of appropriate buildings in this area may be important in terms of retention of small firms and to the apparel industry although the area is less suitable to their needs than South of Market. Attraction of apparel firms would require transit service improvements. If housing development is encouraged in the Mission, this area offers some potential as a receptor area, at least for the smaller firms, and possibly even for major apparel manufacturers. On the other hand, this area stands the chance of being abandoned as a manufacturing center. The continued presence of specialized buildings attracting no new demand detracts from possible new uses for the land, such as trucking and warehousing. The presence of residential uses in part of the area is not compatible with the nature of existing industrial activities.

On the assumption that the area is not needed as a receptor area for displaced manufacturing firms, limited redevelopment actions might be undertaken to make available land for new housing, particularly in the northern section around China Basin Channel. Given existing land occupancy in the area around the Southern Pacific rail yards, redevelopment confined to this area would cause little disruption of existing manufacturing or warehousing uses. However, if extended southward along and west of Third Street, many manufacturing and wholesaling activities would be displaced and the risks of accelerated decline in employment in these sectors would be high. If forced to relocate, there is a good chance that firms would leave the city.

Similarly, selective redevelopment for new industrial uses -- chiefly trucking and warehousing -- which involve relatively low levels of employment per acre, could possibly be successful without accelerating the decline of existing employment. Again, however, a large-scale program runs risks of overall declines in employment.

A "minimum effort" would involve minor improvements in the industrial environment, possible relocation or abandonment of rail rights-of-way, and some street improvements. This could enhance the area's attractiveness for wholesaling and warehousing purposes, although no significant employment gains would result. A hands-off approach would, in essence, involve gradual decline of industry in the area, as projected, without major adverse effects on existing occupants or employment. This approach would involve lesser risks of reduced employment through forced relocation and out-migration. In the past, expansion of public uses of land in the area has made reasonable use of land which would have otherwise remained vacant. Sometimes, however, it has accelerated loss of manufacturing jobs. As land becomes available through gradual decline in manufacturing and wholesaling activities, public use may be appropriate. But public action should be a result, rather than a cause, of industrial decisions.

d. Recommendations

No major redevelopment activity should be undertaken in this area; any redevelopment should be limited to areas which do not currently house a high amount of manufacturing employment, chiefly the northern section near China Basin Channel, and should be assessed in terms of potential for non-manufacturing uses. The risks of dislocation of existing employment in more southerly areas is higher than the probability of increased employment through new development. Demolition of buildings susceptible to continued industrial use should be avoided. This will require a small-area or building-specific approach to any redevelopment action needed to accommodate new uses, such as public or residential use.

The area south of 16th Street should be maintained over the short term as a potential receptor area for industries which may relocate from the Mission or South of Market into existing buildings. Programs should be developed to encourage or require the demolition of specialized buildings which cannot be used for other purposes in order to encourage new trucking and warehousing development.

The southerly portion of this district, near Army Street and the new port facilities, has the best potential for new wholesaling, warehousing, and trucking facilities. Efforts to accommodate such uses should be focused here, particularly since this area is not attractive for residential, office, or institutional use.

Although the area east of Third Street has potential for port-related warehousing and wholesaling uses, demand for such uses will depend entirely on the future health of the port and the development of any new port facilities in the Central Basin area. Since there is not other industrial demand in this area, the most appropriate approach is to avoid actions which could force out existing firms. If new users cannot be found for buildings such as the American Can and Reynolds Aluminum buildings, removal of these buildings should probably be encouraged to allow for expansion of trucking facilities and storage. The area is in need of additional trucking facilities, as evidenced by the spillover of trucks onto streets in the area and firms' plans for expansion.

The potential use of the American Can building for apparel manufacturing should be explored further, especially if manufacturers near First and Mission are forced to relocate by private redevelopment.

Consideration should also be given to the possibility of using vacant and underutilized land in the China Basin Channel area for institutions -- especially educational and medical institutions. This is discussed under the section on strategies to pursue in the residential sections of the city with respect to new institutional demand.

5. Inner Mission (East of South Van Ness)

a. The Issues

Despite past and projected declines in employment in manufacturing, this area has maintained an attractiveness to industrial users, including both large apparel manufacturers and small firms in a variety of manufacturing activities, and wholesalers. The availability of existing industrial space in varying quantities is a source of attraction to small firms and the apparel industry. Relatively inexpensive land, a higher quality environment than is found in the Potrero district, and proximity to free-ways appears to be attractive to transportation uses. The Mission could continue to attract firms relocating from other areas. Apart from the South of Market area, this area, because of the kind of space available, is most likely to attract small firms displaced from other areas or entering the market. However, reuse of abandoned food plants is not likely and these occupy a substantial ground area. New construction to accommodate industry should not be anticipated.

Proposals have been made recently to phase out industrial use in parts of the Inner Mission in order to accommodate new residential development. This could involve both the scattered and fairly limited industrial use south of 20th Street and the more extensive, predominantly industrial area north of 20th. The question is whether or not this can be accomplished without actually causing a loss in employment in manufacturing, wholesaling, and related uses.

b. Alternative Strategies

Given the probability of decline in some industries currently in the Mission and the possibility of replacement of some of those industries by different firms, several options are open to this area. First, continued use of existing industrial buildings (except specialized food and metal product plants) could be encouraged by maintaining the inventory and encouraging the continued industrial character of the area. This strategy would help to retain employment in industries which are forced to relocate from other areas, particularly the South of Market area, and to provide space for new, small firms engaged in a variety of loft-type activities. Whether such a strategy is important in terms of the city's economy will depend to some extent on the future of South of Market.

A second alternative would involve reuse of land, and possibly buildings, likely to be abandoned for industrial use by existing firms for residential and related uses, converting this area or parts of it from industrial to residential and institutional use. A third strategy related to the second is to attempt to relocate firms now in the area to other industrial areas in order to make possible this conversion.

The major choice is whether or not to institute policies and programs designed to convert from industrial to residential use or to continue industrial use. The choice depends in large measure on the desirability of expanded residential development and the marketability of new housing in the area, subjects beyond the scope of this study.

c. Evaluation

On the assumption that residential development is both desirable and feasible, no rapid and wholesale conversion (e.g., as in a large-scale redevelopment) is possible without an almost certain loss of jobs in manufacturing and wholesaling. Although employment in these activities will almost certainly decline in any event, forced relocation would accelerate the rate of decline. On the other hand, if industrial space available and to become available in the South of Market, Potrero, and Northern Bayshore districts is retained, space in the Mission is not likely to be required to accommodate new firms' demand, or for relocation of firms displaced from other areas.

Given these circumstances, conversion of the area could best be accomplished by a gradual and selective process of redevelopment and phasing out of industrial use. Small firms can be more successfully relocated than large manufacturers although assistance should be provided to ensure that job loss is minimized. Focus of attention for conversion should be on reuse of land which becomes available due to the out-migration of the large food processors or other firms using large plants on large parcels. Open-air uses which would not be compatible with residential use, such as concrete plants and truck terminals, can probably be successfully relocated within the city to other areas, particularly the Potrero and Northern Bayshore districts, since the investment in plant is less than in the more specialized and larger plants.

If conversion to residential use is not desired or is not feasible, the area north of 20th Street appears to be a viable one for continued industrial and warehousing use, as well as institutional and business services uses. The closing of breweries and of other food processing plants, however, is likely. This will make available land (if buildings are removed) which has potential for new warehousing and business services. Failure to remove abandoned buildings, however, could have a detrimental effect on the environment of the area for new industrial users, as well as preventing new uses for the land. Without special legislation, private action to remove such buildings is not likely.

d. Recommendations

If it is desired to convert parts of the area to residential use, the city should proceed gradually and should minimize forced relocation of large-scale manufacturing. This can be accomplished through acquisition of properties as they are released from industrial use by existing firms and acquisition of properties in open-air (or very low-intensity) uses. Zoning changes which would prevent continued use once existing industries leave may also be useful. To the extent possible, buildings which have generalized space usable by small firms should be retained as long as possible, consistent with new residential development. By contrast the city should explore possible actions to ensure demolition of abandoned buildings with no potential reuse.

Gradually, the city should attempt to provide for the relocation of remaining firms in the area to the Potrero and Northern Bayshore areas when space becomes available, and should discourage new industrial development if it is inconsistent with new residential development. Given the accessibility of this area to retail stores and personal services, compared to the other industrial areas, the potential for incremental residential use would appear to be much greater than in the Potrero or Bayshore industrial areas.

6. Northern Bayshore District

a. The Issues

Manufacturing employment has declined severely in this area. The decline will continue, resulting in even higher vacancies in large, old plants (particularly in the metal products industry) for which there is no new demand. The impact is likely to be felt chiefly near Army Street, whereas the Apparel City-Produce Market area seems to attract new firms when others move out. A great deal of vacant land is available both in the India Basin Redevelopment Project and nearby.

One issue is how to use vacant land and buildings and, particularly, what to do in the Army Street area where rapid abandonment by large-scale manufacturers is likely to create a very depressed situation, detracting from the attractiveness of the area to remaining industrial users. Except for demand for new warehouse space, no new activities are projected for the area.

Another issue is whether or not to continue to hold redevelopment land vacant in hopes of attracting new industries with high employment potential or whether to make it available for new warehouse development.

In addition, expansion of public uses, such as the sewage treatment plant, threatens to displace industrial firms below Army Street, just as redevelopment activity has in the past.

b. Alternative Strategies

Given the relative health of the Apparel City and Islais Creek areas, one relevant strategy is to support existing industrial use in the area and to avoid actions detrimental to continuation of existing firms as long as possible. The Apparel City area represents a very large amount of employment, despite past declines. Many of the firms are likely to leave the city if forced out by public action. A strategy of support would include several components:

- Some physical improvements in street condition, layout, and access;
- Ensuring that "messy" open-air uses, such as auto dismantling and contractors' storage, are controlled to prevent nuisance effects on other uses;
- Planning public uses to avoid dislocation of plants housing activities which are likely to leave the city if forced to relocate; and
- Assuring that vacant buildings do not fall into serious disrepair or cause a blighting effect on the area.

A second relevant strategy involves reuse of land which is now vacant and land which is likely to become vacant for uses for which there is a demand. This is one of the few areas in the city -- particularly near India Basin and Piers 94 and 96 -- where new warehousing can be attracted to the city. Although the employment impacts would be minimal, development of new warehouse space would increase the revenues and might stimulate increased port business. Attraction of new warehousing depends in part on the availability of relatively low-priced land. The India Basin Redevelopment Project offers relatively cheap land. As industrial users vacate existing space along Army Street and Islais Creek, limited redevelopment may be justified for warehousing. The amount of new warehouse space that can be marketed will depend in part on the policies of the port with regard to provision of storage space for its clients on piers and port land.

c. Evaluation

Although long-term prospects for manufacturing are not good, this industrial district could retain its general attractiveness to a variety of industrial uses. Some relatively minor public actions, at no major cost, could substantially improve the environment of parts of the area for industrial use, possibly slowing out-migrations or encouraging new developments and investments. In particular, street conditions, lighting, and and policing need to be improved in the Islais Creek area to improve access, eliminate localized flooding, and enhance security for warehouses and wholesalers. Efforts also need to be made to monitor and assure compliance with

environmental standards by open-air uses and to minimize dirt and waste material generated on streets in the area from movement of materials to and from the salvage, storage, and auto wrecking yards.

This area also offers opportunities for the accommodation of uses which may be displaced from the China Basin and Mission districts, including contractors' storage, truck terminal operations, concrete batching, and machinery manufacturing and repair.

The area near the new port facilities offers the best potential for accommodation of potential demand for new wholesaling and warehousing uses, including ancillary offices. Without the provision of land at reasonable prices, this potential demand will not be realized in San Francisco, resulting in foregone tax revenues and continued high vacancies of land zoned for industrial purposes. The attraction of new major manufacturing uses, on the other hand, in newly constructed space, is highly improbable and the area is not well located for business services requiring proximity to downtown business and/or transit access.

d. Recommendations

The planning department should provide for improvements to the street network in the area in its Capital Improvement Program, concentrating first on improvements around Islais Creek Channel where paved streets are presently nonexistent or in poor condition.

The Redevelopment Agency should evaluate the market for new warehouse space in India Basin. If, as expected, land can be marketed for warehouse space, it should be unless definite offers are made for more employment-intensive use.

Need for land for expanded public uses should be met to the extent possible on parcels of land which are already vacant or in open-air uses. Redevelopment or public acquisition of land which would force industrial relocation should be avoided.

The possibility of acquiring sites abandoned by large manufacturers and reselling them, after clearance, for new warehousing should be explored further in terms of its financial feasibility, on a case-by-case basis.

7. Southern Bayshore

a. The Issues

The part of this area east of James Lick Freeway and south of Third Street (South Basin) has very limited, if any, potential for new industrial uses, even warehousing uses. Generally, access is less direct and more in conflict with residential, commercial, and commuter traffic than in the area west of the freeway or in the Northern Bayshore area. Declines in manufacturing activity are projected to occur, resulting in additional

building and land vacancies. Construction of the Hunter's Point Freeway and/or the Southern Crossing might have retarded these declines and perhaps attracted some new uses. The city's South Bayshore Plan assumed these facilities. Although a redevelopment project for industrial use might attract new warehousing uses, manufacturing use is less likely. As a result, more employment could be lost from displacement of existing activities than would be gained from redevelopment.

The Williams-Paul industrial area north of Third Street seems to have more favorable prospects and is a compact, attractive industrial area with buildings in good condition. Some vacancies were observed but the area has maintained stable employment and land use patterns. No major issues are presented.

The area west of the freeway is also stable and although some declines in employment are likely, the area could well remain a healthy industrial district.

b. Alternative Strategies

With respect to the Williams-Paul area and the westerly industrial area near the county line, no specific form of intervention is required. As some building vacancies occur, these areas provide potential receptor sites for industries which might be relocated from other districts. Some new warehousing development might occur on vacant land already available, although there is little vacant land suitable for industrial use at present.

In the South Basin-Candlestick Cove area, the only large parcels of vacant land are too steep for industrial use, are being acquired for a shoreline park, or are designated for residential use in the city's Comprehensive Plan. Support of existing industrial uses in the South Basin area would probably require, at minimum, a major improvement in access. Reuse for industrial purposes through redevelopment and rebuilding is one possible strategy, as suggested in the South Bayshore Plan. However, projections of employment and land requirements indicate that no demand exists for land in this area apart from warehouse use. Nearby South San Francisco offers lower taxes and better highway, rail, and airport access.

Another alternative is to convert land now used for industrial purposes in the South Basin area to residential, commercial, and institutional uses. To avoid acceleration of employment declines, this would have to occur gradually, making use of vacant land first. The latter is available chiefly near the bay.

Lastly, open land and land in storage uses could provide remote parking for downtown commuters, possibly in multi-story garages also serving Candlestick Park.

c. Evaluation

With respect to the Williams-Paul and westerly parts of the district, a "hands-off" policy appears to be the most appropriate strategy with respect to the land use pattern of the areas. No major environmental problems appear to exist.

With respect to the South Basin-Candlestick Cove area, future declines in industrial employment and use are very likely, resulting in land potentially available for other use. The most likely use is non-industrial.

d. Recommendations

Redevelopment action in the South Basin-Candlestick Cove area which would force out existing firms should be avoided to prevent premature employment losses. If feasible, new residential development should be encouraged close to the new shoreline park on land now vacant or in open-air uses, to minimize losses of existing industries. Existing open-air uses can probably be relocated into the Northern Bayshore area.

The planning department should experiment, as planned, with remote parking, first on open land and, if successful, then possibly in garages.

E. GENERAL STRATEGIES OUTSIDE THE MAJOR COMMERCIAL AND INDUSTRIAL DISTRICTS

1. The Issues

A reasonably high proportion (30-40%) of projected employment gains in the city is expected to be accommodated outside the city's eastern commercial and industrial belt, if past trends continue. Much of this employment is accounted for by projected increases in medical and educational services and in government. They will generate higher demand for office and institutional space. Demand for retail space and automobile services is also expected to expand in the residential areas of the city, the extent depending primarily on population changes.

In the past, institutional expansion has come into conflict with residential uses in those neighborhoods having a large amount of institutional employment. As projected, this demand will continue to exert pressure for increasing employment densities in those areas already having relatively high employment densities and for conversion of land from residential to institutional and office use.

Retail space demand will increase chiefly in those areas experiencing increased housing construction and in specialized commercial areas. These areas are generally highly developed so that retail demand may also conflict with residential demand. Since the market value of land or building space for retail, office, or institutional purposes is usually higher than for residential use, these uses can out-bid residential use.

2. Alternative Strategies

Given the projected availability of land in the eastern third of the city which will be abandoned for industrial purposes, one strategy which could ease future conflicts caused by expanding office and institutional demand in the residential areas would be to use land coming vacant in the eastern industrial areas for institutional purposes, such as health facilities and educational institutions. Similarly, auto repair and other automobile service activities, which have characteristics of space occupancy more similar to those of light industry than of residential or office uses, could be relocated or encouraged to locate where land is available. Related to such strategies would be changes in zoning which would prohibit new institutional developments in the residential areas.

Another strategy, relevant to retail space demand, is to continue to try to maintain compact, neighborhood commercial areas which tend to be more vital than scattered strip commercial activity. However, to avoid land use conflicts between residential use and commercial use and supporting parking, it may be desirable to attempt to limit the amount of growth in specialized commercial areas and divert some of that growth to other commercial areas where there is adequate space or room for some intensification.

Given the continuing scarcity of housing in the city, minimization of overall losses to the inventory are assumed to be desirable.

3. Evaluation

Relocation of existing institutions is unlikely to be feasible given the large commitments to facilities already in place. However, further study would be warranted regarding the feasibility of accommodating new growth in medical and educational services in the Potrero district and possibly along Third Street in the Northern Bayshore district where adequate land is available. This would require improved transit service and a public commitment to environmental improvements, but may be possible.

In addition, a substantial degree of influence over land use trends related to government employment can be directly affected by the city in decisions regarding the location of new city offices, storage facilities, and shops. Location of such facilities by the city, as well as by the state and federal governments, in areas where land would otherwise be vacant, would be more desirable in fiscal terms than acquisition of land which would otherwise be in private use.

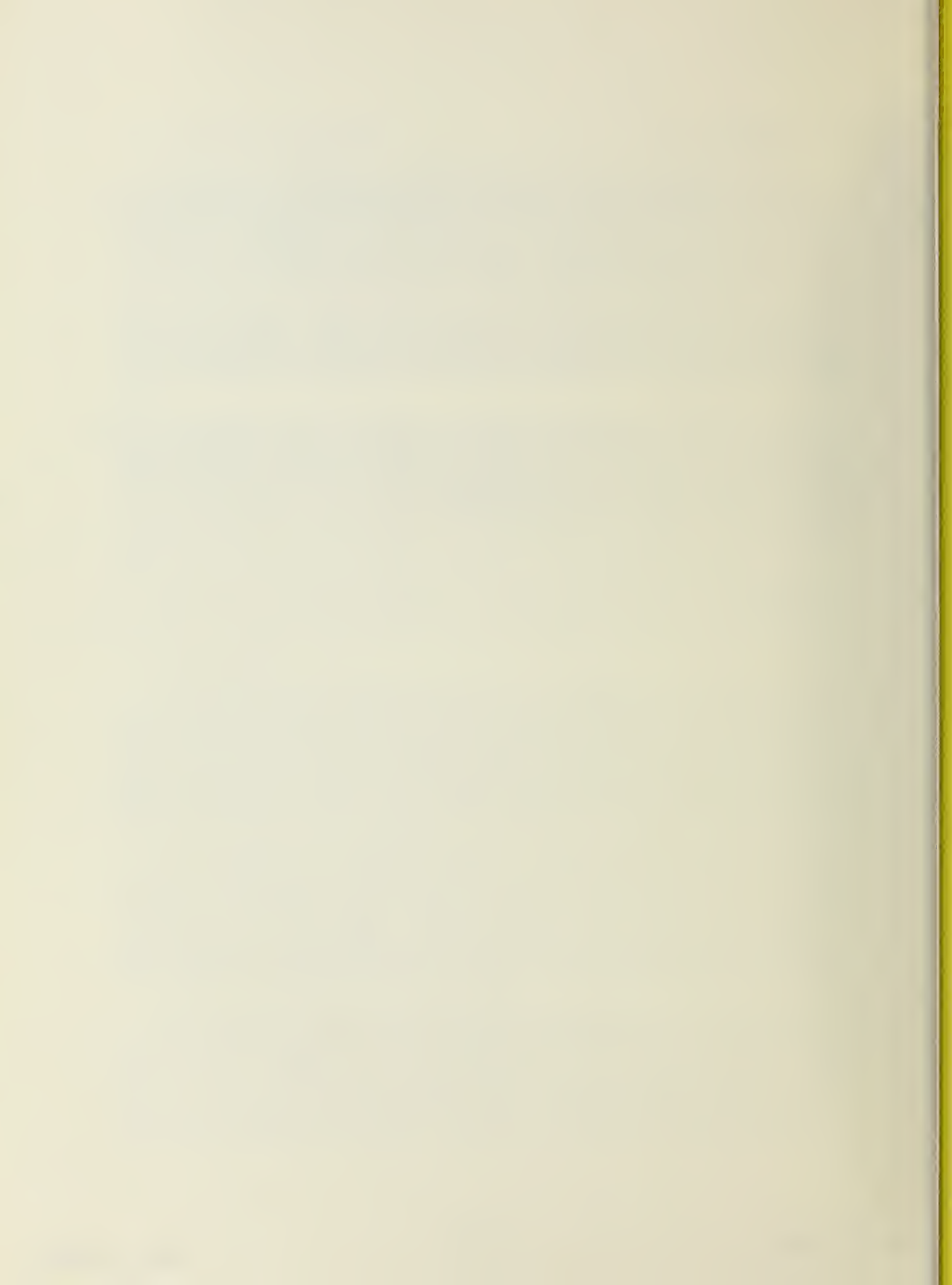
Maintenance of compact neighborhood commercial areas is important for the survival and health of neighborhood retailing in the city. Associated parking requirements, particularly in those areas attracting city-wide customers, are large, however, and not easily accommodated without public assistance. To date there is little evidence that transit will account for a significant amount of travel to and from shopping areas, except Downtown.

4. Recommendations

The city should encourage location and expansion of institutional activities, including medical and educational services in the eastern third of the city where space is and will be available. To minimize further encroachment in existing residential neighborhoods limitations upon expansion of such institutional use through zoning prohibition or constraints should be seriously considered.

Light industrial uses with extensive space requirements such as auto repair and service should also be encouraged to locate in the eastern portion of the city. Encroachment upon existing residential neighborhoods should be curtailed.

The city should evaluate expansion of public parking garages in neighborhood commercial districts to minimize land requirements and maintain the compactness of these areas. Diffusion of retail space and its spillover into residential areas can be avoided by zoning in accordance with evident need for retail space based on area plans.







APPENDIX A

COMPARISON OF EMPLOYMENT ESTIMATES FOR SAN FRANCISCO INDUSTRIES

The following tables present a comparison of employment estimates for San Francisco industries from various state and federal government sources. A summary table of the major sectors of San Francisco's economy is followed by tables which break down employment in the manufacturing, TCU (transportation, communications, and utilities), retail trade, FIRE (finance, insurance, and real estate), and service sectors by two-digit Standard Industrial Classifications (SIC). Wholesale trade employment is given by three-digit SIC.

TABLE A-1

COMPARISON OF EMPLOYMENT ESTIMATES FOR MAJOR INDUSTRIAL SECTORS IN SAN FRANCISCO

SIC Code	Industry	HRD 1970	Employment Development Department			County Business Patterns				U.S. Census			
			1962	1970	1972	1973	1962	1970	1972	1973	1963	1967	1972
7-9	Agriculture, Forestry, and Fisheries	788	-	-	-	-	509	536	404	409	-	-	-
10-14	Mining	466	300	500	400	400	1,674	383	216	224	-	-	-
15-17	Contract Construction	19,919	19,100	19,900	17,500	19,000	18,731	23,747	21,615	19,449	-	-	-
19-39	Manufacturing	53,782	62,400	53,800	49,800	50,900	62,804	58,911	53,224	54,131	60,600	52,100	-
41-49	Transportation, Com- munications, and Utilities	53,329	52,200	59,200	55,100	54,300	41,800	53,105	50,758	50,608	-	-	-
50	Wholesale Trade	39,639	46,400	39,600	36,900	37,700	44,240	43,163	41,618	40,487	35,452	31,883	27,575
52-59	Retail Trade	56,800	53,900	56,800	53,400	54,600	54,630	58,299	55,139	57,264	53,231	52,696	52,438
60-67	Finance, Insurance, and Real Estate	65,513	50,800	66,600	66,100	68,000	51,502	65,574	65,769	67,690	-	-	-
70-89	Services	85,784	77,600	99,700	101,500	107,800	66,177	97,211	97,453	105,055	-	-	-
91-93	Government	-	74,500	91,500	88,700	87,000	-	-	-	-	-	-	-
	Unclassified Establishments	-	-	-	-	-	1,165	934	1,775	1,223	-	-	-

Sources: State of California Department of Human Resources Development, California Employment and Payrolls; State of California Employment Development Department (formerly HRD), Estimated Nonagricultural Wage and Salary and Agricultural Employment, San Francisco-Oakland SMSA, 1958-1972; U.S. Department of Commerce, Bureau of the Census, County Business Patterns; U.S. Department of Commerce, Bureau of the Census, Census of Manufactures and Census of Business.

TABLE A-2

COMPARISON OF EMPLOYMENT ESTIMATES FOR THE MANUFACTURING INDUSTRY IN SAN FRANCISCO

SIC Code	Industry	HRD 1970	Employment Development Department				County Business Patterns				U.S. Census	
			1962	1970	1972	1973	1962	1970	1972	1973	1963	1967
19-39	Total Manufacturing	53,782	62,400	53,800	49,800	50,900	62,804	58,911	53,224	54,131	60,600	52,100
20	Food and Kindred Products	13,462	14,900	13,300	11,100	10,800	12,062	8,532	8,354	7,768	11,000	8,700
22	Textile Mill Products	423	7,600	8,700	9,400	10,200	281	288	420	511	-	-
23	Apparel and Other Textile Products	8,213					6,613	8,132	8,082	9,376	7,000	6,600
24	Lumber and Wood Products	201	2,500	1,400	1,000	1,200	656	301	388	297	-	-
25	Furniture and Fixtures	1,186					1,977	1,196	1,168	1,212	2,000	1,200
26	Paper and Allied Products	1,781	14,000	12,000	10,900	11,400	1,075	772	634	651	925	N.A.
27	Printing and Publishing	10,093					12,217	10,874	9,997	10,173	11,500	10,200
28	Chemicals and Allied Products	1,790	5,200	5,700	5,600	5,400	2,012	1,276	1,141	1,279	1,200	N.A.
29	Petroleum and Coal Products	3,875					-	-	-	-	-	-
30	Rubber and Plastics Products	-	-	-	-	-	305	244	335	447	-	-
31	Leather and Leather Products	282	-	-	-	-	296	326	340	330	-	-
32	Stone, Clay, and Glass Products	570	-	-	-	-	627	319	(D)	(D)	527	N.A.
33	Primary Metal Industries	676	7,600	6,100	5,500	5,300	970	574	606	740	678	N.A.
34	Fabricated Metal Products	5,475					5,872	5,581	4,277	4,464	6,100	5,400
35	Machinery, except Electrical	1,675	2,900	1,700	1,900	1,600	3,099	2,544	2,039	2,032	2,400	2,400
36	Electrical Equipment and Supplies	864	1,400	900	600	700	1,145	2,119	2,113	2,220	1,400	1,000
37	Transportation Equipment	1,623	2,500	1,600	1,400	1,600	4,063	2,504	1,718	1,390	2,800	2,900
38	Instruments and Related Products	404	-	-	-	-	132	(D)	348	299	-	-
39	Miscellaneous Manufacturing Industries	941	-	-	-	-	1,249	1,116	941	950	1,000	800
	Administrative and Auxiliary	-	-	-	-	-	8,074	11,405	9,927	9,643	-	-

N.A. = Not available.

(D) = Data withheld.

Sources: State of California Department of Human Resources Development, California Employment and Payrolls; State of California Employment Development Department (formerly HRD), Estimated Nonagricultural Wage and Salary and Agricultural Employment, San Francisco-Oakland SMSA, County Series 1958-1972; U.S. Department of Commerce, Bureau of the Census, County Business Patterns; U.S. Department of Commerce, Bureau of the Census, Census of Manufactures.

TABLE A-3

COMPARISON OF EMPLOYMENT ESTIMATES FOR THE
TRANSPORTATION, COMMUNICATIONS, AND UTILITIES INDUSTRY IN SAN FRANCISCO

SIC Code	Industry	HRD 1970	Employment Development Department				County Business Patterns			
			1962	1970	1972	1973	1962	1970	1972	1973
41-49	Total Transportation, Communi- cations, and Utilities	53,329	52,200	59,200	55,100	54,300	41,800	53,105	50,758	50,608
41	Local and Interurban Passenger Transit	4,296	-	-	-	-	4,979	5,696	5,417	5,736
42	Trucking and Warehousing	7,287	-	-	-	-	6,192	6,324	6,111	6,149
44	Water Transportation	11,081	-	-	-	-	9,095	9,391	6,852	7,194
45	Transportation by Air	2,849	-	-	-	-	2,749	5,521	5,165	4,814
47	Transportation Services	3,247	-	-	-	-	1,870	3,209	3,538	3,452
48	Communications	18,165	-	-	-	-	11,257	17,358	16,186	15,492
49	Electric, Gas, and Sanitary Services	6,467	-	-	-	-	5,286	(D)	(D)	(D)
	Administrative and Auxiliary	-	-	-	-	-	369	5,606	(D)	7,771

(D) = Data withheld.

Sources: State of California Department of Human Resources Development, California Employment and Payrolls; State of California Employment Development Department (formerly HRD), Estimated Nonagricultural Wage and Salary and Agricultural Employment, San Francisco-Oakland SMSA, County Series 1958-1972; U.S. Department of Commerce, Bureau of the Census, County Business Patterns.

TABLE A-4

COMPARISON OF EMPLOYMENT ESTIMATES FOR THE RETAIL TRADE INDUSTRY IN SAN FRANCISCO

SIC Code	Industry	HRD 1970	Employment Development Department			County Business Patterns				U.S. Census			
			1962	1970	1972	1973	1962	1970	1972	1973	1963	1967	1972
52-59	Total Retail Trade	56,800	53,900	56,800	53,400	54,600	54,630	58,299	55,139	57,264	53,231	52,696	52,438
52	Building Materials and Farm Equipment	-	-	-	-	-	911	717	814	792	647	533	533
53	General Merchandise	9,701	-	-	-	-	11,845	8,614	7,979	8,136	10,684	10,442	7,938
54	Food Stores	5,826	-	-	-	-	5,719	5,738	5,706	5,838	5,669	5,524	5,674
55	Automotive Dealers and Service Stations	4,806	-	-	-	-	4,798	5,720	5,408	5,017	4,825	5,147	5,104
56	Apparel and Accessory Stores	7,068	-	-	-	-	6,574	5,622	5,794	5,947	5,427	4,837	5,137
57	Furniture and Home Furnishings Stores	2,390	-	-	-	-	2,831	2,032	1,955	1,905	2,248	2,234	1,795
58	Eating and Drinking Places	18,465	-	-	-	-	15,131	18,292	17,383	18,669	16,970	18,268	18,667
59	Miscellaneous Retail Stores	-	-	-	-	-	6,012	7,110	6,552	7,208	4,761	5,691	7,590
	Administrative and Auxiliary	-	-	-	-	-	809	4,454	3,548	3,752	-	-	-

Sources: State of California Department of Human Resources Development, California Employment and Payrolls; State of California Employment Development Department (formerly HRD), Estimated Nonagricultural Wage and Salary and Agricultural Employment, San Francisco-Oakland SMSA, County Series 1958-1972; U.S. Department of Commerce, Bureau of the Census, County Business Patterns; U.S. Department of Commerce, Bureau of the Census, Census of Business.

TABLE A-5

COMPARISON OF EMPLOYMENT ESTIMATES FOR THE
FINANCE, INSURANCE, AND REAL ESTATE INDUSTRY IN SAN FRANCISCO

SIC Code	Industry	HRD 1970	Employment Development Department				County Business Patterns			
			1962	1970	1972	1973	1962	1970	1972	1973
60-67	Total Finance, Insurance, and Real Estate	65,513	50,800	66,600	66,100	68,000	51,502	65,574	65,765	67,690
60	Banking	23,109	-	-	-	-	15,149	22,549	24,208	26,512
61	Credit Agencies Other than Banks	3,873	-	-	-	-	2,058	2,126	2,332	2,807
62	Security and Commodity Brokers and Services	5,964	-	-	-	-	3,613	6,279	5,165	5,152
63	Insurance Carriers	20,034	-	-	-	-	19,022	19,391	18,583	17,791
64	Insurance Agents, Brokers, and Service	4,833	-	-	-	-	4,450	5,009	4,869	4,907
65	Real Estate	6,511	-	-	-	-	5,705	7,449	7,714	8,175
66	Combined Real Estate, Insurance, etc.	207	-	-	-	-	526	227	207	182
67	Holding and Other Investment Companies	982	-	-	-	-	862	2,228	2,141	1,704
	Administrative and Auxiliary	-	-	-	-	-	117	316	546	468

Sources: State of California Department of Human Resources Development, California Employment and Payrolls; State of California Employment Development Department (formerly HRD), Estimated Nonagricultural Wage and Salary and Agricultural Employment, San Francisco-Oakland SMSA, County Series 1958-1972; U.S. Department of Commerce, Bureau of the Census, County Business Patterns.

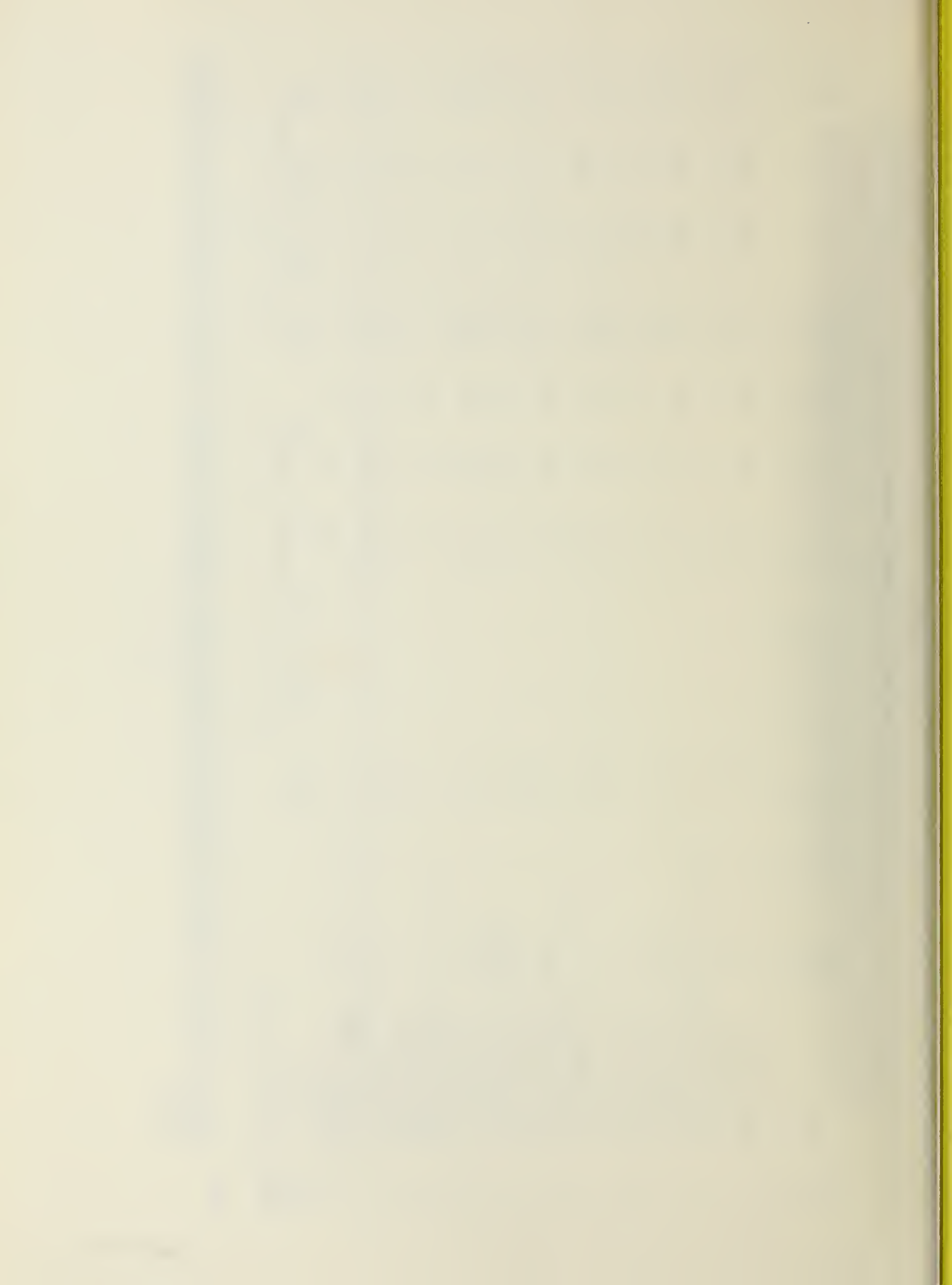
COMPARISON OF EMPLOYMENT ESTIMATES FOR THE SERVICES INDUSTRY IN SAN FRANCISCO

SIC Code	Industry	HRD 1970	Employment Development Department				County Business Patterns				U.S. Census		
			1962	1970	1972	1973	1962	1970	1972	1973	1963	1967	1973
70-89	Total Services	85,784	77,600	99,700	101,500	107,800	66,177	97,211	97,453	105,055	-	-	-
70	Hotels and Other Lodging Places	9,991	-	-	-	-	8,246	9,918	10,088	11,500	7,766*	8,751*	9,177*
72	Personal Services	5,541	-	-	-	-	6,512	6,135	5,354	5,229	6,544	6,632	5,590
73	Miscellaneous Business Services	20,022	-	-	-	-	12,495	23,615	22,925	24,491	15,065	22,430	24,042
75	Auto Repair Services and Garages	3,934	-	-	-	-	2,542	3,593	3,402	3,691	3,026	3,028	3,245
76	Miscellaneous Repair Services	-	-	-	-	-	1,157	891	1,125	1,051	-	-	-
78	Motion Pictures	2,082	-	-	-	-	1,866	2,202	2,563	2,632	1,516	1,494	2,154
79	Amusement and Recrea- tion Services, NEC	2,925	-	-	-	-	2,900	3,064	3,198	3,532	N.A.	2,879	2,695
80	Medical and Other Health Services	17,810	-	-	-	-	11,555	16,790	17,393	18,243	-	-	-
81	Legal Services	4,461	-	-	-	-	2,516	4,090	4,428	5,032	N.A.	N.A.	4,579
82	Educational Services	1,457	-	-	-	-	2,026	4,295	5,049	5,839	-	-	-
84	Museums, Zoological and Botanical Gardens	-	-	-	-	-	173	220	260	252	-	-	-
86	Nonprofit Membership Organizations	7,187	-	-	-	-	8,847	12,501	12,932	13,812	-	-	-
89	Miscellaneous Services	9,416	-	-	-	-	5,094	9,189	8,133	9,129	-	-	-
	Administrative and Auxiliary	-	-	-	-	-	248	625	603	622	-	-	-

N.A. = Not available.

*Includes SICs 701 and 703 only.

Sources: State of California Department of Human Resources Development, California Employment and Payrolls; State of California Employment Development Department (formerly HRD), Estimated Nonagricultural Wage and Salary and Agricultural Employment, San Francisco-Oakland SMSA, County Series 1958-1972; U.S. Department of Commerce, Bureau of the Census, County Business Patterns; U.S. Department of Commerce, Bureau of the Census, Census of Business.







APPENDIX B

DESCRIPTION OF METHODOLOGY OF PROJECTIONS OF EMPLOYMENT BY OCCUPATION

The occupational mix of employment in each industry was estimated using the 1960 and 1970 breakdown of employment by industry and occupation for the San Francisco-Oakland SMSA. Although San Francisco employment is a major portion of the SMSA employment, the occupational mix of an industry in San Francisco could differ from the occupational mix of the same industry in the SMSA. Such differences could be accounted for by differing proportions of sub-industries within the industry and by differing techniques of production or degrees of automation in San Francisco and the rest of the SMSA.

However, despite the possible sources of difference between the occupational mixes of industry in San Francisco and the SMSA, there are many reasons to expect the occupational mix of an industry in San Francisco to be similar to the occupational mix of the same industry in the SMSA. Stated in another way, the best available estimate of the occupational mix of an industry in San Francisco is from the statistics on the San Francisco-Oakland SMSA.

The classification of industries used in the U.S. Census is different from the County Business Patterns classification of industries used in the projections. In particular, employees of governments under the Census classification are included in the industry corresponding to their function -- e.g., bus drivers are included in transportation. The only completely "government" categories are "education," "government," and "public administration."

It was necessary to estimate the distribution of projected employment among the U.S. Census categories of industry. The resulting industry distribution of employment was translated into projections of the occupational distribution of employment through projections of the occupational mix of each industry.

The projection of the occupational mix of employment in each industry was made by a technique which assumes the occupational mix is gradually approaching a limit mix. The limit or equilibrium mix for each industry and the rate of approach are estimated from the 1960 and 1970 data.

An illustration of the results of the projection are shown in Table B-1 for the utilities industry of the San Francisco-Oakland SMSA.

The projections for each industry are derived from the following relations:

TABLE B-1

ILLUSTRATION OF PROJECTED OCCUPATIONAL MIX OF EMPLOYMENT IN THE UTILITIES INDUSTRY

<u>Occupational Group</u>	<u>1960</u>	<u>1970</u>	<u>1985</u>	<u>2000</u>	<u>Limit</u>
Professional, Technical, and Kindred Workers	13.0%	14.7%	16.7%	18.2%	22.2%
Managers and Administrators	3.6	4.1	4.7	5.1	6.3
Sales Workers	0.3	0.8	1.3	1.7	2.8
Clerical and Kindred Workers	24.1	24.4	24.6	24.9	25.4
Craftsmen and Kindred Workers	28.1	24.5	20.3	17.3	8.8
Operatives	14.4	14.5	14.5	14.5	14.6
Laborers	15.3	12.4	9.1	6.7	0.0
Service Workers	1.2	4.7	8.7	11.6	19.8

If $a_i(t)$ stands for the proportion of employment in the i -th occupation in year t then

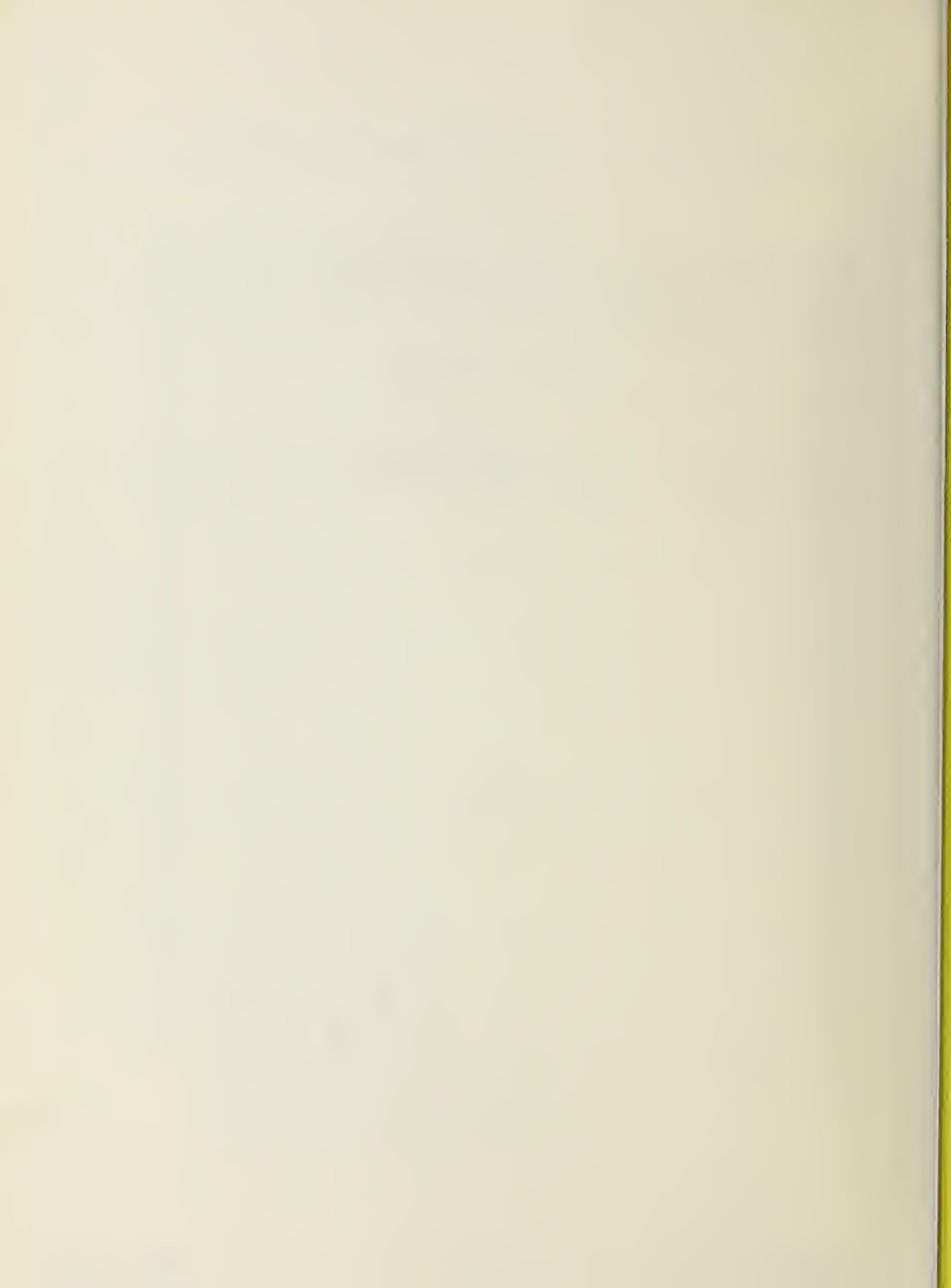
$$a_i(t) - Z_i = K^t [a_i(70) - Z_i]$$

where Z_i is the eventual or limit proportions the occupational mix is shifting toward and k is a positive constant less than unity. The base year (1970) occupational mix is represented as $a_i(70)$. The values of Z_i and k are estimated from the 1960 and 1970 occupational mixes. The values of Z_i are found from

$$Z_i = \frac{1}{1-k} a_i(70) - \frac{k}{1-k} a_i(60)$$

and k is the minimum value of the ratio $a_i(70)/a_i(60)$.

The method projects the proportion of employment in some occupation approaching, but never reaching, zero. For the utilities industry the method projects the employment of laborers to decline toward zero but to be 6.7% in 2000.



APPENDIX C

LOCATION QUOTIENTS FOR INDUSTRIES

The following tables provide location quotients by two-digit Standard Industrial Classification for the manufacturing, TCU (transportation, communications, and utilities), retail trade, FIRE (finance, insurance, and real estate), and service industries. San Francisco is compared with the United States, Baltimore, Boston (Suffolk County), and St. Louis for the years 1962 and 1972 in each of the five tables. An explanation of the methodology and interpretation of location quotients was given in Chapter II of the text.

TABLE C-1

LOCATION QUOTIENTS FOR MANUFACTURING INDUSTRIES - 1972 AND 1962
SAN FRANCISCO COMPARED WITH SELECTED AREAS

Industry	Year	United States		Baltimore		Boston (Suffolk County)		St. Louis	
		LQ ₁	LQ ₂	LQ ₁	LQ ₂	LQ ₁	LQ ₂	LQ ₁	LQ ₂
Total Manufacturing	1972	0.43	0.85	0.53	0.72	0.81	0.75	0.39	0.35
	1962	0.48	0.97	0.60	0.78	0.77	0.68	0.45	0.45
Food and Kindred Products	1972	0.8	1.6	0.6	0.7	0.9	0.9	0.6	0.6
	1962	1.0	1.9	0.7	0.9	1.0	0.9	0.7	0.7
Textile Mill Products	1972	0.1	0.1	0.5	0.7	0.6	0.5	0.3	0.3
	1962	0.04	0.1	0.2	0.3	0.2	0.2	0.2	0.2
Apparel	1972	0.9	1.8	0.7	1.0	0.8	0.8	1.0	1.0
	1962	0.7	1.3	0.5	0.6	0.4	0.4	0.6	0.6
Lumber and Wood Products	1972	0.1	0.2	0.5	0.7	D	D	0.5	0.4
	1962	0.2	0.3	0.8	1.0	1.1	1.0	0.7	0.7
Furniture and Fixtures	1972	0.4	0.7	0.5	0.7	1.0	0.8	0.5	0.5
	1962	0.7	1.4	0.6	0.7	1.4	1.2	0.5	0.5
Paper and Allied Products	1972	0.2	0.3	0.1	0.2	0.4	0.3	0.2	0.2
	1962	0.2	0.5	0.2	0.3	0.5	0.4	0.2	0.2
Printing and Publishing	1972	1.4	2.8	1.0	1.4	0.7	0.7	0.8	0.7
	1962	1.7	3.4	1.3	1.6	1.0	0.9	1.0	1.0
Chemicals and Allied Products	1972	0.2	0.4	0.1	0.2	1.0	0.8	0.1	0.1
	1962	0.3	0.7	0.2	0.3	1.8	1.6	0.1	0.1
Rubber and Plastics Products	1972	0.1	0.2	0.2	0.2	0.3	0.3	0.1	0.1
	1962	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.2
Leather and Leather Products	1972	0.2	0.4	0.6	0.8	0.1	0.1	0.1	0.1
	1962	0.1	0.2	0.3	0.4	0.1	0.05	0.05	0.05
Primary Metal Industries	1972	0.1	0.2	0.1	0.1	1.0	0.8	0.1	0.1
	1962	0.1	0.2	0.1	0.2	0.7	0.6	0.2	0.2
Fabricated Metal Products	1972	0.5	1.0	0.6	0.8	1.0	0.8	0.3	0.2
	1962	0.7	1.4	0.6	0.8	1.2	1.1	0.5	0.5
Machinery, Except Electrical	1972	0.2	0.3	0.4	0.5	0.5	0.4	0.2	0.2
	1962	0.3	0.5	0.7	0.8	0.6	0.6	0.3	0.3
Electrical Equipment and Supplies	1972	0.2	0.4	0.4	0.5	0.6	0.5	0.3	0.3
	1962	0.1	0.2	0.2	0.3	0.1	0.1	0.1	0.1
Transportation Equipment	1972	0.2	0.3	0.2	0.2	3.5	3.2	0.1	0.1
	1962	0.3	0.7	0.6	0.7	2.1	1.9	0.3	0.3
Instruments and Related Products	1972	0.1	0.3	0.9	1.3	0.2	0.2	0.3	0.3
	1962	0.05	0.1	0.7	0.9	0.05	0.05	0.1	0.1
Miscellaneous Manufacturing Industries	1972	0.3	0.7	0.6	0.9	0.4	0.4	0.3	0.3
	1962	0.4	0.9	0.6	0.8	0.7	0.7	0.4	0.4

D = Data withheld.

Source: Arthur D. Little, Inc., calculations based on data from *County Business Patterns*, 1972 and 1962, and U.S. Department of Commerce, Bureau of the Census population reports.

TABLE C-2

LOCATION QUOTIENTS FOR TRANSPORTATION, COMMUNICATIONS, AND PUBLIC UTILITIES INDUSTRIES — 1972 AND 1962
SAN FRANCISCO COMPARED WITH SELECTED AREAS

Industry	Year	United States		Baltimore		Boston (Suffolk County)		St. Louis	
		LQ ₁	LQ ₂	LQ ₁	LQ ₂	LQ ₁	LQ ₂	LQ ₁	LQ ₂
Total Transportation, Communications, and Public Utilities	1972	1.9	3.9	1.5	2.0	1.3	1.2	1.6	1.5
	1962	1.8	3.5	1.1	1.4	1.1	1.0	1.5	1.5
Local and Interurban Passenger Transit	1972	2.2	4.3	1.9	2.6	0.7	0.6	2.5	2.4
	1962	2.1	4.2	0.7	0.8	0.7	0.6	1.9	1.9
Trucking and Warehousing	1972	0.9	1.7	0.7	0.9	1.4	1.2	0.5	0.5
	1962	0.9	1.9	0.7	0.9	1.2	1.0	0.6	0.6
Water Transportation	1972	5.6	11.2	1.1	1.5	3.1	2.7	4.2	4.0
	1962	7.0	13.9	1.4	1.8	2.6	2.3	8.3	8.3
Transportation by Air	1972	2.3	4.7	15.3	21.2	0.8	0.7	3.5	3.3
	1962	1.8	3.6	12.1	15.3	0.9	0.8	2.8	2.8
Transportation Services	1972	4.8	9.5	3.1	4.3	D	D	3.0	2.8
	1962	3.4	6.7	1.8	2.2	1.7	1.5	2.6	2.6
Communications	1972	2.2	4.3	2.1	2.9	1.3	1.2	2.0	1.9
	1962	1.8	3.5	1.5	1.9	1.0	0.9	1.5	1.5
Electric, Gas, and Sanitary Services	1972	D	D	D	D	D	D	D	D
	1962	1.2	2.3	D	D	1.2	1.0	D	D

D = Data withheld.

Source: Arthur D. Little, Inc., calculations based on data from *County Business Patterns*, 1972 and 1962, and U.S. Department of Commerce, Bureau of the Census population reports.

TABLE C-3

LOCATION QUOTIENTS FOR RETAIL TRADE — 1972 AND 1962
SAN FRANCISCO COMPARED WITH SELECTED AREAS

Industry	Year	United States		Baltimore		Boston (Suffolk County)		St. Louis	
		LQ ₁	LQ ₂	LQ ₁	LQ ₂	LQ ₁	LQ ₂	LQ ₁	LQ ₂
Total Retail Trade	1972	0.7	1.4	0.8	1.1	1.0	0.9	1.0	1.0
	1962	0.9	1.7	0.9	1.1	0.9	0.8	1.1	1.1
Building Material and Farm Equipment	1972	0.2	0.5	0.7	1.0	1.2	1.2	0.4	0.4
	1962	0.3	0.5	0.8	1.0	0.8	0.7	0.6	0.6
General Merchandise	1972	0.5	1.1	0.5	0.6	0.5	0.5	0.7	0.7
	1962	1.0	2.1	0.6	0.8	0.8	0.7	1.0	1.0
Food Stores	1972	0.5	1.0	0.6	0.9	0.8	0.7	1.0	0.9
	1962	0.6	1.2	0.7	0.8	0.9	0.8	1.1	1.1
Auto Dealers and Service Stations	1972	0.5	0.9	0.7	1.0	1.6	1.6	1.0	1.0
	1962	0.5	1.0	0.8	1.0	1.4	1.2	0.9	0.9
Apparel and Accessory Stores	1972	1.1	2.2	1.2	1.6	1.2	1.1	1.3	1.2
	1962	1.4	2.7	1.5	1.9	1.1	1.0	1.2	1.2
Furniture and Home Fur- nishings Stores	1972	0.6	1.3	0.7	0.9	1.0	1.0	0.8	0.7
	1962	1.0	2.0	1.1	1.4	1.2	1.1	1.1	1.1
Eating and Drinking Places	1972	1.0	2.0	1.2	1.6	1.1	1.0	1.4	1.4
	1962	1.2	2.4	1.1	1.4	1.1	1.0	1.5	1.5
Miscellaneous Retail Stores	1972	0.8	1.5	0.8	1.1	1.0	0.8	1.5	1.4
	1962	0.8	1.6	0.7	0.9	0.8	0.7	1.2	1.2

Source: Arthur D. Little, Inc., calculations based on data from *County Business Patterns*, 1972 and 1962, and U.S. Department of Commerce, Bureau of the Census population reports.

LOCATION QUOTIENTS FOR FINANCE, INSURANCE, AND REAL ESTATE INDUSTRIES — 1972 AND 1962
SAN FRANCISCO COMPARED WITH SELECTED AREAS

Industry	Year	United States		Baltimore		Boston (Suffolk County)		St. Louis	
		LQ ₁	LQ ₂	LQ ₁	LQ ₂	LQ ₁	LQ ₂	LQ ₁	LQ ₂
Total Finance, Insurance, and Real Estate	1972	2.5	5.0	1.9	2.6	1.1	1.0	2.2	2.0
	1962	2.4	4.8	1.9	2.5	1.1	1.0	1.9	1.9
Banking	1972	3.4	6.8	3.0	4.1	1.7	1.6	3.2	2.9
	1962	2.8	5.6	2.9	3.7	1.4	1.1	2.6	2.6
Credit Agencies	1972	0.9	1.8	0.5	0.5	1.4	1.3	0.7	0.6
	1962	1.0	2.0	0.6	0.8	1.4	1.1	0.6	0.6
Security and Commodity Brokers and Services	1972	4.0	8.0	4.0	5.5	1.0	0.9	2.0	1.8
	1962	3.5	7.0	4.8	6.2	0.9	0.7	2.2	2.2
Insurance Carriers	1972	2.7	5.4	2.0	2.8	0.7	0.6	2.1	1.9
	1962	3.0	6.0	2.3	3.0	0.9	0.7	3.0	3.0
Insurance Brokers	1972	2.5	5.0	2.4	3.3	1.3	1.2	2.2	2.0
	1962	2.7	5.4	2.5	3.3	1.2	1.0	1.2	1.2
Real Estate	1972	1.4	2.8	1.0	1.4	1.5	1.4	0.6	0.5
	1962	1.4	2.8	1.2	1.6	1.3	1.0	1.2	1.2
Combined Real Estate, Insurance, Etc.	1972	0.8	1.6	1.7	2.3	5.0	4.6	D	D
	1962	1.1	2.2	1.5	2.0	3.8	3.0	0.9	0.9
Holding and Other Investment Companies	1972	4.2	8.4	7.9	10.9	1.7	1.6	3.4	3.1
	1962	3.6	7.2	8.3	10.8	1.1	0.9	4.2	4.2

D = Data withheld.

Source: Arthur D. Little, Inc., calculations based on data from *County Business Patterns*, 1972 and 1962, and U.S. Department of Commerce, Bureau of the Census population reports.

TABLE C-5

LOCATION QUOTIENTS FOR SERVICE INDUSTRIES — 1972 AND 1962
SAN FRANCISCO COMPARED WITH SELECTED AREAS

Industry	Year	United States		Baltimore		Boston (Suffolk County)		St. Louis	
		LQ ₁	LQ ₂	LQ ₁	LQ ₂	LQ ₁	LQ ₂	LQ ₁	LQ ₂
Total Service	1972	1.3	2.6	1.1	1.5	0.9	0.8	1.1	1.1
	1962	1.3	2.5	1.2	1.5	0.9	0.8	1.1	1.1
Hotels and Other Lodging Places	1972	1.8	3.6	5.7	7.9	1.7	1.6	2.0	1.8
	1962	1.9	3.8	3.0	3.9	1.7	1.4	1.7	1.7
Personal Services	1972	0.9	1.8	0.8	1.1	1.2	1.1	0.8	0.7
	1962	0.9	1.8	0.8	1.0	1.2	1.0	0.9	0.9
Miscellaneous Business Services	1972	2.1	4.2	1.2	1.7	1.2	1.1	1.4	1.3
	1962	1.9	3.8	2.0	2.6	1.1	0.9	1.6	1.6
Auto Repair, Services, and Garages	1972	1.3	2.6	1.0	1.4	1.2	1.1	1.3	1.2
	1962	1.2	4.2	1.1	1.4	0.8	0.6	1.4	1.4
Miscellaneous Repair Services	1972	0.8	1.6	0.7	1.0	1.0	0.9	0.7	0.6
	1962	1.0	2.0	0.8	1.0	1.3	1.0	1.0	1.0
Motion Pictures	1972	2.1	4.2	2.5	3.5	1.0	0.9	4.7	4.2
	1962	1.4	2.8	1.9	2.5	1.4	1.1	2.2	2.2
Amusement and Recreation Services	1972	1.0	2.0	1.0	1.4	1.3	1.2	1.5	1.4
	1962	1.1	2.2	1.6	2.1	1.4	1.1	1.7	1.7
Medical and Other Health Services	1972	0.8	1.6	0.6	0.8	0.5	0.5	0.8	0.7
	1962	0.9	1.8	0.7	0.9	0.6	0.5	0.7	0.7
Legal Services	1972	2.5	5.0	1.7	2.3	1.0	0.9	3.5	3.2
	1962	2.0	4.0	1.9	2.5	0.9	0.7	2.4	2.4
Educational Services	1972	0.8	1.6	0.5	0.7	0.4	0.4	0.4	0.4
	1962	0.5	1.0	0.3	0.4	0.3	0.2	0.4	0.4
Museums, Botanical and Zoological Gardens	1972	2.0	4.0	—	—	6.7	6.2	1.5	1.4
	1962	2.5	5.0	—	—	1.3	1.0	2.5	2.5
Nonprofit Membership Organizations	1972	1.5	3.0	1.6	2.2	1.0	0.9	1.1	1.0
	1962	1.5	3.0	1.4	1.8	0.9	0.7	1.1	1.1
Miscellaneous Services	1972	2.0	4.0	1.8	2.5	0.9	0.8	2.2	2.0
	1962	1.8	3.6	1.9	2.5	0.8	0.6	1.5	1.5

Source: Arthur D. Little, Inc., calculations based on data from *County Business Patterns*, 1972 and 1972, and U.S. Department of Commerce, Bureau of the Census population reports.



APPENDIX D

A PARTIAL LISTING OF INTERVENTION TOOLS

A brief description is given of each tool, the types of problems it can solve, its objectives, the types and amount of resources the city is required to commit to implement the tool, its feasibility in San Francisco, and examples of the effects of such tools when they have been used in other cities. These discussions do not provide all of the information available about an individual tool but do summarize its most important characteristics. By matching the types of problems found in San Francisco with the types of tools which have been used to treat these problems, tool packages which will be useful in San Francisco can be selected for further analysis and testing.

Several tools which are either illegal in San Francisco or affect problems which are not apparent within the city have been included in this discussion because they provide the reader with a more thorough understanding of the types of techniques which have been used in other locations. Also, in some cases San Francisco is or has implemented innovative techniques, e.g., downtown zoning incentives, which reflect obvious staff competence and sophistication in the use of the tool. Nonetheless, should the types of problems which these tools are created to treat evolve, this discussion would provide some basic information about the future types of actions the city could take to correct such problems.

An index of intervention tools appears on the following pages.

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PROPERTY TAX EXEMPTIONS

Major Characteristic of Intervention Strategy: Financial

Problem Treated

Property taxes are one of several costs faced by any business. A reduction in property taxes for a business may mean an increase in profit. Some communities feel that because businesses are profit-oriented, their locational decision will be affected by the property taxes in the various communities considered. A community with a high property tax may feel its competitive position is damaged.

Importance of the Problem to Industry

While property taxes are a cost of business operation, they are generally minimal when compared to such factors as the cost of labor and the cost of raw materials. These costs may differ much more among locations than property taxes. Therefore, property tax payments are not a major factor affecting business location. They may become important, however, when all other considerations among alternative locations are equal.

Purpose of Tool

Providing property tax exemptions to industries will lower the tax payment the industry must make to the city. The purpose of the tool is to make the city more attractive to the industry by creating a property tax comparative advantage with other communities. Tax exemptions have historically been used as an attractive tool although they may also be used in a preventive sense in an effort to keep industry from locating in other cities which may have other locational advantages.

Components of Tool

Generally the property tax exemption takes the form of a promise from a municipality to an industry that a certain percentage of its property will be exempt from property taxes for a given period. There are various forms of this tool. For instance, an industry's property may be exempt from the school millage rate but not from the city service rate. One of the problems of the tool from an industry's point of view is that succeeding city councils may disregard the actions of a previous city council.

Area Impacted by Tool

Traditionally, tax exemption has been used on a case-by-case basis. The exemption will cover only those facilities used by the specific industry with which an agreement is made.

Sectors Affected by Tool

In those states where the use of a tax exemption is legal, its use is usually restricted to manufacturing uses. Some states also limit the length of an exemption.

Feasibility of Tool in San Francisco

The use of tax exemptions in the City of San Francisco for commercial land is illegal. Even in states where the use of this tool is legal, several problems have arisen. For instance, businesses which have not been granted the exemption have applied pressure on the city to include them under the exemption provision. In addition, as mentioned above, an industry has no guarantee that a succeeding city government may not change the policy. Furthermore, most cities do not have the capability to assess whether an industry is truly capable of paying a local property tax and may therefore grant concessions to companies which would have located in the community without the exemption.

Case Studies

Several states permit tax exemptions: Rhode Island, Vermont, Kansas, Nebraska, Oklahoma, Alabama, Arkansas, Kentucky, Louisiana, Maryland, Mississippi, and South Carolina. In Vermont there have been recent instances of use of this tool. Simmonds Aerocessories, Inc., located a branch plant in Vermont with a 10-year property tax exemption. Although other factors were important, the company admitted that the exemption was effective in persuading the company to locate in Vermont.* In another case, the Wells Lamson Company argued for a tax exemption largely on the basis of following a precedent which had earlier been set by the Town of Barre, Vermont, in providing an exemption to the Rock-of-Ages Corporation.

PROPERTY TAX STABILIZATION

Major Characteristic of Intervention Strategy: Financial

Problem Treated

While an industry may find a low property tax in a given community attractive at the time of its locational decision, many industries are concerned about whether the property tax will increase in later years. These industries may express an unwillingness to locate in a town unless they can be assured of a given level of property tax. Property tax stabilization is used to make the community more attractive to industry.

Importance of the Problem to Industry

While property taxes are one of the business costs, they are minor in comparison with several other fixed and operating costs. Hence, a change in property tax level may not seriously affect the business' overall viability. Most studies of industrial location have shown the level of property taxes not to be a serious consideration.

Purpose of Tool

Tax stabilization is used to guarantee prospective industries a fixed property tax cost regardless of changing conditions within the community. It is assumed by communities that a fixed cost will allow industries to do better future planning and will assure them of no increases in property tax, thereby making the community more attractive.

Components of Tool

Tax stabilization generally takes the form of an agreement between the city and a prospective industry concerning the amount of property tax the industry will pay regardless of fluctuation in either assessed value or the millage rate. For instance, a city could promise an industry that its property tax bill would remain constant for the first 10 years of operation and then increase by no more than 2% in each succeeding year.

Area Impacted by Tool

Generally property tax stabilization agreements are reached for specific parcels which will be used by particular prospective industries.

Sectors Affected by Tool

Where the tool is legal usage has been limited to industrial and warehouse uses.

Feasibility of Tool in San Francisco

Property tax stabilization is illegal in the State of California. Where it has been tried, several problems have arisen. First, businesses which have not been granted the property tax stabilization have put pressure on the city to be included under its protective shelter. Second, many businesses are wary of a guaranteed property tax because succeeding city governments may revoke the agreement. Finally, the lack of additional property tax which could have been received in the absence of a tax stabilization agreement may cause financial difficulties for the community.

FAVORABLE PROPERTY VALUATIONS (UNDER ASSESSMENT)

Major Characteristic of Intervention Strategy: Financial

Problem Treated

Property taxes are one of the fixed expenses faced by every business. A reduction in these costs will be to the benefit of business if the level of municipal services received is not affected. Communities which hope to obtain a locational competitive advantage over other towns may feel that local taxes could inhibit the location of desired companies. Therefore, a decision by the local community to reduce these costs could make it more attractive to industry.

Importance of the Problem to Industry

Although property taxes are one of a business' costs, they generally account for only a small percentage of total sales. Therefore, the possibility of having a low property tax cost becomes important only when most other factors concerning industrial location, such as labor availability and cost, proximity to market and supplies, and business climate of alternative sites are equal.

Purpose of Tool

Under assessing the value of commercial property will reduce the property tax on under assessed parcels. The tool is used basically in the attractive mode, either to lure new industries to the community or to entice those already in the community to locate any plant expansions within the community. It is basically another variant of providing exemptions or stabilization.

Components of Tool

When this tool has been utilized, communities usually promise prospective industries that their property will be assessed at a given value for a set period of time. The amount of under assessment may vary from case to case. The agreement may or may not be in writing. In circumstances where the legality of such an inducement might be in question, it is usually unwritten. Since under assessment is far less easy to uncover than either exemption or stabilization, it is more frequently used when there exists some disagreement concerning the appropriateness of the tool. As is the case with other tax concession tools, industries taking advantage of its provisions run the risk of having a subsequent local government invalidate the arrangement.

Area Impacted by Tool

As with other tax concession tools, the tool is used primarily on a case-by-case basis for those parcels used by the particular industry.

Sectors Affected by Tool

The tool is used for industry, warehouses, and offices. It may also be used to hold industrial land for further development.

Feasibility of Tool in San Francisco

By California law, under-assessment is illegal. However, it is very difficult to prove that a particular property has been under assessed. Utilization of the tool would require a unique working relationship between the Assessor's Office and the department in charge of attracting new industry to the community. If the use of the tool became widespread, it is likely that businesses which were not benefited would complain. Municipalities probably do not have the capacity to determine when using the tool would affect a particular firm's location decision. Therefore, they run the risk of offering it to firms who do not need the subsidy.

SITE VALUE TAXATION

Major Characteristic of Intervention Strategy: Financial

Problem Treated

The present system of property taxation tends to encourage the holding of land idle and to penalize owners for making improvements to their property. A firm which is considering expansion of its plant will include the increase in tax assessments in its decision about the appropriate location for expansion. If a city's tax rate for improvements is higher than neighboring municipalities, a firm may chose to locate in the place of greatest tax savings.

Importance of the Problem to Industry

In general, taxes are a small part of the total cost of business. However, because interest rates are high, the prospects of an additional tax bill may be enough to induce an industry to postpone its decision to expand or develop on an already acquired site.

Purpose of Tool

To establish a tax system which would raise local revenue and at the same time encourage development where it is permitted.

Components of Tool

Two versions of the site value tax system have been developed and simulated:

Version One:

This method established a value rating for each parcel of land which is based on the annual market value of the land at its best permitted use. The assessment is levied whether the land is used or not used for that purpose.

Version Two:

Unlike the first, this version of the site value system does not favor any particular use of land over another. Tax bills are calculated for each parcel in much the same way as the current property tax. The tax base, however, excludes existing improvement and personal property. All existing homeowners, veterans, and business inventory exemptions are excluded under this system. In addition, churches and charitable organizations would lose their tax exempt status. The only group escaping a tax liability under such a program would be government agencies.

The rationale for eliminating exemptions is to establish a tax system which is neutral with respect to the economic uses of land. Since exemptions tend to create a structure of incentives and disincentives which may distort land uses, a "pure" site value tax would not discriminate among uses.

Area Impacted by Tool

The adjustments in tax bills would occur on a parcel-by-parcel basis. However, the amount of revenue generated would affect the entire city's tax base.

Sectors Affected by Tool

Any property owner would be affected by a new tax system.

Feasibility of Tool in San Francisco

A central question concerning a site value tax is what would be the redistributational effects of such a tax system. Who would pay more, who less? The egalitarian aspects of a tax system which uniformly taxes land and not improvements may have a serious effect on income distributions. The possible impacts of such a tax system cannot be anticipated without careful study.

Case Studies

Several studies have been done on the possible impact of a switch from property taxes to a site value taxation system. Theodore Smith simulated the redistributational effects of a site value tax for a sample of parcels in San Bernardino, California, and found that on the average, the tax on commercial industrial properties would be higher under the new system than under the current property tax and that the site value tax would benefit single dwelling and multiple unit residents. The sample, however, was heavily weighted toward residential dwellings.

Neuner, Popp, and Sebold studied the possible impacts of site value taxation on various classes of property in San Diego. Their simulation provided different conclusions. Table 1 indicates the change in tax liabilities as reported in a summary of their study. Two tax bills were calculated for 12 different classes of property. The first was designed to generate the same amount of revenue as the currently existing property tax. The tax base is determined only by the land, not improvements or personal property. The second bill is calculated to more accurately represent the cost of city expenditures for each parcel without taking into account state reimbursements for tax revenues lost due to certain property being exempted. With no money forthcoming from the state, the revenue required was \$17 million more than the first tax bill.

Table 1 indicates the impact of the switch over to site value taxation. In the case of both tax bills, commercial and industrial land has a substantial cut in the amount of tax required. The critical factor which

TABLE 1

CHANGE IN TAX LIABILITIES BY ECONOMIC USE CLASS: SAN DIEGO*

Class	Parcel Count	Net Assessed Value	Land Value	Ratio of NAV to LV	Percent Change Assumption 1*	Percent Change Assumption 2**
Single Dwelling	120,733	\$ 634,144,490	\$283,981,210	2.23	+ 9.7	+20.7
Multiple Dwelling	15,281	112,965,367	53,775,567	2.10	+16.7	+28.3
Apartment	5,108	115,541,745	36,190,317	3.19	-23.2	-15.6
Trailer Parks	20	1,823,760	1,108,320	1.65	+48.9	+63.8
Combined Business and Dwelling	1,197	12,041,844	8,039,330	1.50	+63.6	+79.9
Hotels and Motels	232	35,939,357	11,816,042	3.04	-19.4	-11.4
Commercial and Industrial	5,202	348,154,624	94,990,946	3.67	-33.1	-26.5
Public Utilities	4	109,974,798	7,936,460	13.86	-82.3	-80.6
Irrigation and Domestic	36	1,110,238	668,175	1.66	+47.5	+62.2
Undeveloped Land	21,557	145,035,546	127,878,376	1.13	+116.1	+137.6
Matched Parcels	169,370	1,516,731,769	626,384,743	2.43	+ 1.0	+11.1
Unmatched Parcels	11,979	161,742,331	58,509,028	2.76	- 11.3	- 2.5
Total	181,349	\$1,678,474,100	684,893,771	2.45	0	+10.0

*This site-value tax generates the same total tax receipts for San Diego as the current property tax.

**This site-value tax generates approximately \$17 million more in tax receipts than does the current property tax. The \$17 million is the amount of the site reimbursement.

Source: E. Neuner, D.O. Popp, and F.D. Sebold, "The Impact of a Transition to Site-Value Taxation on Various Classes of Property in San Diego," Land Economics, 1974, pp. 181-184.

determines whether a parcel or class of parcels will benefit from site value taxation is the degree of development that has taken place relative to other parcels. The degree of development is described by the ratio of net assessed value over land value. Those parcels with high ratios are the ones which will have lower tax bills. Undeveloped land has the highest increase in assessment.

What we don't know is the resulting change in behavior of property owners under a site value taxation system. Because the system has not been tried, it is difficult to predict the long-term impact on land development of such tax.

INDUSTRIAL AID BONDS

Major Characteristic of Intervention Strategy: Financial

Problem Treated

One of the problems which industries face when moving or expanding is finding a physical plant that suits their needs and is affordable. The long lead time required for plant construction may inhibit a company's mobility. In addition, constructing the required facilities may tie up large percentages of a company's assets. By relieving some of these problems through either constructing new facilities for a given industry or placing existing facilities at a company's disposal and making the necessary modifications, municipalities feel they can create a competitive advantage over other communities which do not offer these same services.

Importance of the Problem to Industry

The results concerning the effectiveness of municipal bonds are conflicting. Most studies agree that they are not major determinants of industrial location and are important only when the major factors are equal between alternative locations. Some studies have shown them to be quite important in these marginal cases while others have shown them to be of only minor importance. In addition, while many persons have suggested that only industries of "poor quality" make use of industrial aid bonds, some studies indicate nationally recognized companies have made use of these mechanisms.

Purpose of Tool

The purpose of industrial aid bonds is to increase the competitive advantage of the community issuing the bonds. This is done by providing buildings and other facilities to companies at low cost, relieving companies of the need to tie up their own assets in capital infrastructure; and by allowing industries to avoid the local property tax since the municipally-owned buildings built with bond revenues are tax exempt. Each of these methods is designed to reduce the cost of locating in the community.

Components of Tool

The actual form of a municipal aid bond will vary from issue to issue. There are some characteristics which are found in almost all industrial aid bond issues. The type of bonds issued are generally revenue bonds although there have been some issuances of general obligation bonds. The proceeds of the bond issues are used for two purposes: financing buildings and/or equipment or providing long-term risk capital. The first use is the most common. Using bond proceeds the municipality acquires land and develops buildings. The buildings may be built to the specifications of a specific industrial client or they may be built for general purpose and then used to attract a client. Once a client has been selected, the buildings are

generally leased for a fixed period of time. Because the interest rate paid on the bonds is less than that which must be paid on private issues, the lease rates are less than those which would prevail in the private sector. The difference in interest rates reflects the savings received by the industry. In addition, since the facilities remain the property of the municipality, they may be exempted from property taxes.

Area Impacted by Tool

The area is defined by the land and buildings bought and/or constructed with the proceeds of the bond issue. The size may range from the size of a site required by one firm to an entire industrial park.

Sectors Affected by Tool

In states where the tool is legal, the use of bonds is limited to aiding industrial and warehousing operations.

Feasibility of Tool in San Francisco

Article 1, Section 14 of the California Constitution has been construed to prevent the lending of public credit for private profit. As such, the manner in which industrial aid bonds are commonly used in other states is illegal in California. However, the city may construct projects designed to benefit the public good and private profit may be realized from these projects if it is incidental to the purpose of the project. In short, it appears that the use of industrial aid bonds to develop facilities desired by a particular company would be illegal while use of municipal funds to develop an industrial area in which space was then leased to companies which had not been contacted before the development decision was made would be legal.* However, this type of project would probably be financed with a means other than industrial aid bonds.

Case Studies

Several studies have been conducted of the effect of industrial aid bonds. A study by Bradley and Bowlin found industrial aid bonds had been used extensively in several southern states and that several major corporations had cited the availability of bond financing as one of several important locational considerations.** However, other studies have suggested that industrial aid bonds are an inappropriate use of public borrowing power and that the type of industries attracted by them tend to be marginal and of little benefit to the community.***

*City of Oakland vs. Williams, 206 Cal. 315, 274 P.328; and Pipes vs. Hildebrand, 110 Cal. App.2d 645, 243 P.2d 123.

**J.F. Bradley and O.D. Bowlin, "Industrial Aid Bonds - A Device for Attracting New Industry," Municipal Finance, May 1961, p. 151.

***T.R. Westmeyer, "Industrial Bond Controversy Boils," National Civic Review, June 1964, p. 329.

PROVIDING MONEY FOR BUSINESS EXPENSES

Major Characteristic of Intervention Strategy: Financial

Problem Treated

When moving to a new location, industry needs funds to cover moving expenses, the purchase and installation of required equipment, and other costs associated with moving. Some municipalities feel that by providing funds to industries they are trying to attract to their community, they can increase their competitive advantage over other municipalities.

Importance of the Problem to Industry

Availability of funds is a constant industry problem. The ability of this program to aid industry is totally dependent on the amount of funds a community provides.

Purpose of Tool

Money or equivalent services may be provided for one or more of a number of reasons: moving expenses, purchase and installation of equipment, buying or leasing necessary space, or paying for other needs. A municipality might also donate land or buildings to prospective industries. The overall goal of the program is to lure industries into the community or to retain those already present.

Components of Tool

The city can either provide money or other resources to particular industries. Once the donation has been made, the city has no control over its use unless the allowable use of the funds is stipulated before the grant is made.

Area Impacted by Tool

In that the grants are generally given to firms, they are not area-specific except to the extent to which they may be used to further development at the industry's location. When the use of the tool takes the form of donating land and/or buildings it is site-specific.

Sectors Affected by Tool

These tools can be used with any business. Usage has been concentrated in the industrial sector.

Feasibility of Tool in San Francisco

Article IV, Section 31 of the California Constitution prohibits gifts of public funds. This makes the tools discussed above illegal. Even where the tool is legal it is difficult to determine which businesses should receive funds and the size of the allocations.

LOW-COST RENTAL OR SALES
OF SITES AND/OR BUILDINGS

Major Characteristic of Intervention Strategy: Financial

Problem Treated

As with other financial tools, this tool is used to provide industry with a service designed to reduce industrial costs, namely those related to the purchase or rental of sites and/or buildings. In addition, these tools are also designed to relieve industries from the task of locating sufficient sites or facilities.

Importance of the Problem to Industry

The cost of obtaining an adequate site is not a primary factor in making a location decision. In areas in which only a few quality sites are available an industry may be influenced by the ability of a city to provide a choice site.

Purpose of Tool

The purpose of this tool is to provide businesses with sites and/or buildings for either sale or rental at a price lower than that which would have occurred in the free market. These lower-cost facilities are used in either an attractive or preventive sense to make the community more attractive to industry.

Area Impacted by Tool

The area is limited to the size of the site being offered by the community. This may range from a small parcel to a multi-acre site.

Sectors Affected by Tool

In states where the tool is legal any sector may be benefited. The tool has been most often used to the benefit of industry.

Feasibility of Tool in San Francisco

Article IV, Section 31 of the California Constitution has been construed to prohibit gifts of public funds, making the tools discussed illegal.

ADVANCE AGREEMENT ON UTILITY RATES

Major Characteristic of Intervention Strategy: Financial

Problem Treated

Utility costs are very important to some industries. Obviously, reduction of these costs may lead to increased profits. Communities hope that by promising a given rate for utility services, which is usually lower than the rate applicable in surrounding communities, they can gain a competitive advantage, thereby making them more attractive to potential industry.

Importance of the Problem to Industry

The importance of utility costs will vary among industries, depending on their needs. Except for a few sectors, however, utility requirements constitute only a small percentage of total production costs. Different industries would desire agreements for different utility services, depending on their needs.

Purpose of Tool

To provide guaranteed utility rates to industry to enable long-range planning by industry. Also to make these rates lower than standard rates charged other users.

Components of Tool

An agreement between the municipality and the industry that it will provide the industry with a given amount of utility services for a fixed price, where the price will not change during the course of the agreement and is lower than the standard rate. Obviously, agreements can only be reached for those utility services provided by the municipality.

Area Impacted by Tool

The tool is used on a case-by-case basis where the impacted area is the size of the site used by the industry receiving the subsidy.

Sectors Impacted by Tool

In states where the tool is legal use is generally limited to industries, as they would be most benefited by the subsidy.

Feasibility of Tool in San Francisco

Article IV, Section 31 of the California Constitution has been construed to prohibit gifts of public funds, making the tools discussed illegal. Even if the tool were legal in California, it would not be of significant use to San Francisco since electricity, the most costly utility, is not provided by the city.

FIRE

Major Characteristic of Intervention Strategy: Service to Industry

Problem Treated

This tool directs itself to high insurance rates which result from deficiencies in the city fire service.

Importance of the Problem to Industry

Low fire insurance premiums and the prevention of human and capital loss by fire are factors which can influence an industry's locational decision. Fire insurance rates are a substantial cost item, especially to small and middle-sized firms. Rates are determined in part by the availability and quality of local fire protection.

Purpose of Tool

Upgrading fire protection services and applying for fire insurance reclassification serve many purposes. First, strengthening fire defenses and minimizing fire hazards is a preventive measure. At the same time, the tool is also corrective. Striving for a higher fire insurance class involves the reassessment and enforcement of fire control standards and codes. If a lower insurance premium is awarded as a result of a reclassification, it will serve as an attracting device for industries that are seeking to relocate in a particular city and consider their rates of insurance as a factor in their locational decision.

Components of Tool

The Insurance Service Office (ISO) has developed a classification system which evaluates and assesses all fire protection services. Based on that assessment, the ISO issues a class rating for each city. Low class ratings arise out of deficiencies in the water supply, equipment, operation of the fire department, fire service communications, and/or fire safety controls. By improving the strength of its fire defenses in these areas, a city can improve its fire insurance class and thus reduce costs to industry.

Area Impacted by Tool

Planning area.

Sectors Affected by Tool

All people are affected by the quality of fire service.

Feasibility of Tool in San Francisco

By Insurance Service Office standards, San Francisco fire protection services rate quite high. The city's services fall into the second class. As of 1966, no other city had attained a first class rating and only 2.7% of the cities with populations over 25,000 were in the second class. San Francisco's fire service deficiencies are sufficient to bring its rating very close to a third-class rating. Because of stringent fire safety controls, the city would be hard pressed to bring older parts into conformance with building codes and standards. Without major redevelopment, it would be difficult to raise its fire insurance class.

Case Studies

There are two case studies which explore the importance of public provision of fire services in a firm's decision to locate in a particular area. In a survey of 126 firms in North Carolina, 76.6% of the firms responded that fire protection was an essential service and a determinant in their locational choice. Most of those firms responding positively to the need for fire protection were small firms. The larger firms in the sample consistently disregarded fire protection and insurance rates as a significant factor in their locational choices.

In an industrial survey of San Francisco, the Greater San Francisco Chamber of Commerce examined factors which influenced firms in their satisfaction or dissatisfaction with their present site location. Sixty-six percent (192 firms) of those responding felt that fire protection was satisfactory at their present location. Thirty-two percent thought it was of little importance. What the survey does not explicitly address is the extent to which fire protection services would be a contributing factor to the decision to relocate and the place of relocation.

POLICE

Major Characteristic of Intervention Strategy: Service to Industry

Problem Treated

Some industrial areas have the misfortune of also being high crime areas. Where vandalism, robbery, and assault are prevalent, insurance rates are often high and the recruitment of workers willing to risk personal injury is difficult.

Importance of the Problem to Industry

Anticipated or actual damage and loss of property as well as personal injury are an important concern to many firms. In areas where there is a high rate of vandalism, robbery, and assault, the adequacy of police protection could be a significant factor in a firm's decision to relocate. Small firms with minimal operating budgets are more apt to look to public police protection than larger companies which can supplement police service with their own security service.

Purpose of Tool

Solving crimes and recovering stolen property are crucial aspects of police service. But more importantly, this tool is aimed at preventing crimes from being committed.

Components of Tool

Police services include the deterrence of crime, the apprehension of offenders, the recovery of property, and the performance of miscellaneous services such as traffic control and rescue operations. Service improvement may entail modifications in the police response system and the cultivation of improved community/police relations.

Greater efficiency could be achieved in four areas of the police response system:

1. The input process which generates demands for police service.
2. Complaint clerk activity.
3. Information processing and selection of vehicle to be dispatched.
4. Actual dispatch of vehicle.

Recent studies indicate that hiring more police per capita does not by itself lessen crime rates. Capital intensive techniques such as the use of police cars with sophisticated communication devices and computerized tracing routines have been helpful in apprehending offenders. However, the emphasis in cities which experience low crime rates has been on promoting greater visibility of police either on patrol or on foot. Police service depends heavily on cooperation of the community. Since criminals can leave the site of a crime before police arrive, witnesses are a central factor in the apprehension of offenders.

Area Impacted by Tool

Planning area.

Sectors Affected by Tool

All persons in impacted area will benefit from improved police service.

Feasibility of Tool in San Francisco

In 1971, the municipal performance report rated San Francisco the worst among 30 cities of comparable size in its adjusted robbery rate and 27th in its adjusted property crime rate. While San Francisco's poor performance in part reflects the fact that its boundaries are narrowly constructed and do not include many middle class enclaves which are encompassed by other cities, there appears to be room for improvement in police performance. High crime rates and fear of injury and loss of property are critical problems in such areas of the city as Hunter's Point. Small manufacturers in this area are rapidly leaving in much the same way that large manufacturers left when there was a push toward further expansion in the suburbs.

A lack of adequate security in areas well suited for industrial use is a major deterrent to new industries that are looking for sites in San Francisco. If it is one of the city's priorities to attract industry into these areas, San Francisco is going to have to respond with greater police protection or other appropriate services to make these areas safe and attractive to new industries. This may involve a redistribution of manpower so that a greater number of police patrols will cover areas of high crime rate. If this is not possible, the city might consider subsidizing private security systems, either by making crime detector equipment available to companies or by making direct cash grants.

POLICE TRAFFIC SUPERVISION

Major Characteristic of Intervention Strategy: Service to Industry

Problem Treated

Vehicle and pedestrian congestion as well as a lack of parking regulation enforcement can make access to firms difficult for employees, customers, deliveries, and refuse collection.

Importance of the Problem to Industry

The need for improved access is highly situational. Heavy industry which is located in older parts of cities where streets are narrow and uncontrolled for traffic may find access to be a major factor in its decision to relocate.

Purpose of Tool

The police have a responsibility for the safe and efficient movement of traffic on the streets and highways. Improved traffic supervision is a correctional tool which is designed to minimize congestion for people and vehicles.

Components of Tool

Traffic supervision has the following component parts:

1. Traffic and parking law enforcement.
2. The identification of congested areas by location and time of day.
3. The dispatching of officers to expedite the movement of traffic.
4. Accident investigation.

Area Impacted by Tool

Planning area.

Sectors Affected by Tool

Industrial and commercial.

Feasibility of Tool in San Francisco

Improved traffic control is a relatively easy tool to implement. It requires some additional staff time to identify problem areas and to specify the appropriate corrective measure. Based on initial findings, officers or equipment can be used to alleviate congestion.

PUBLIC TRANSPORTATION

Major Characteristic of Intervention Strategy: Service to Industry

Problem Treated

Many firms in the central city, while seemingly well-served by existing public transportation, are difficult to reach by transit. Travel time, plus the necessity of making one, sometimes two or three transfers, makes the trip to work time consuming and uncomfortable. Using the public transportation system can be complicated and expensive. Inadequate parking facilities might in turn make commuting by automobile unfeasible.

Importance of the Problem to Industry

Firms that are labor-intensive and difficult to reach by public transportation might find it hard to recruit and keep their employees. This is a frequent problem among central city firms.

Purpose of Tool

This tool is designed to provide efficient, convenient, and inexpensive ways of transporting people to and from work. It is corrective in the sense that industries may be able to employ segments of the labor market which were previously unavailable to them because of inaccessibility.

Components of Tool

Solutions to the deficiencies in public transportation can be identified by three categories:

1. Information Improvements
2. Transit Fare Improvements
3. Service Improvements

Information Improvements -- It is necessary to design route maps, schedules, bus stop markers, and route designators on the buses themselves which are simple to read and readily available to all people.

Transit Fare Improvements -- Currency substitutes such as tokens, passes, or tickets would allow certain people to ride public transportation without charge or at minimal cost. Fares could be determined on a sliding scale, based on income and frequency of travel.

Service Improvements --

- The use of under-utilized resources such as school vehicles as a means of providing low cost scheduled or charter service at peak hours.

- Use of chartered buses to provide direct home-to-work service on a monthly or weekly contract basis to individual employees.
- Additions or modifications in existing municipal transit routes to better respond to commuting patterns of workers.
- Reverse commuter routes, which would reroute existing bus lines to permit them to serve out-lying job sites in a more effective manner.
- Use of rail-bus vehicles which would utilize both existing bus lines and railroad lines to travel between residential areas and employment centers. Street travel would be used to provide maximum flexibility in boarding service at residential end; railroad lines would facilitate unhampered travel in congested areas.
- Use of small demand-actuated vehicles on an "on call" basis.

Feasibility of Tool in San Francisco

The work force in San Francisco is comprised of people who commute to work from within the city and those who travel to the city by BART, bus, car, and ferry. At issue here is both the question of the adequacy of feeder lines as well as the internal system of public transit. In 1970, 164,400 workers commuted into the city for work. On the surface it does appear that San Francisco's industries are leaving because of their inaccessibility to labor. However, we don't know whether heavy industrial and manufacturing firms are having difficulty recruiting workers and moving to where labor is more available.

Firms who employ workers on night shifts may indeed be experiencing difficulties in recruiting workers when public transit is either inadequate and/or unsafe. Further study would be required to determine those areas of greatest need and the appropriate form of intervention required. The city's expressed interest in helping individual firms solve their transportation needs may do much to improve the climate of business in San Francisco.

SCHOOLS

Major Characteristic of Intervention Strategy: Service to Industry

Problem Treated

Inadequate schools are a major reason for out-migration of families from central cities. Industries that wish to be close to their labor supply may choose to follow their employees out of the city and into the suburbs.

Importance of the Problem to Industry

Locational choice is often made by the chief executives of a firm. People like to live close to where they work. If schools are a critical factor in a family's decision to move, many firms will follow their executives out of areas where educational opportunities are poor and into areas where there are adequate school systems.

Purpose of Tool

This tool is corrective and is designed to indirectly attenuate the exodus of industry.

Components of Tool

The major goal of this intervention tool is to upgrade the quality of education provided in the public school system. Strategy for school improvement involves a careful study of current curriculums and educational achievements by students, an inspection of school facilities, a look at the quality and number of teachers available, and the enrollment trends of students. The specifics of a school improvement program would emerge out of such a study.

Area Impacted by Tool

Planning area.

Sectors Affected by Tool

All sectors.

Feasibility of Tool in San Francisco

A poor school system is often cited by out-migrating families as a major reason for leaving. San Francisco has trouble competing in educational achievement with the outlying areas of the city. While it may not be in the domain of the Planning Department to sponsor a rigorous program of school improvements, the city might do well to invest resources in finding out what would be the best and most efficient way of improving the school system.

WATER SUPPLY/SEWAGE DISPOSAL

Major Characteristic of Intervention Strategy: Service to Industry

Problem Treated

Water supply and sewage disposal systems are used by most, if not all, industries. Some industries have special utility needs which extend beyond the kind of service provided in a particular city. This may be a critical factor in their locational decision.

Importance of the Problem to Industry

Large users of these utilities are concerned with the kind and quality of service as well as the local rate structure. Some manufacturing processes occasionally call for water with peculiar chemical properties or need to discharge a particular effluent into the public sewage disposal system. For firms with special needs, the city's water supply and sewage disposal facilities are important considerations in their locational choice.

Purpose of Tool

This tool is designed to be both corrective and attractive. Industries that find that public water and sewerage service is inadequate may reconsider their decisions to move elsewhere if a city facilitates an improvement in service. For new firms which are choosing a location, good water and sewerage service may be a major attraction.

Components of Tool

Improvement in the water supply and sewage disposal services frequently involve the following:

1. Providing given quantities of water at a specific pressure.
2. Facilitating hookups to the city's sewage lines for new industries.
3. Providing water and sewer utilities for process use.
4. Charging fair and competitive rates for utility service and utility extensions.

Area Impacted by Tool

Planning area.

Sectors Affected by Tool

Industrial

Feasibility of Tool in San Francisco

The City of San Francisco provides two kinds of water -- domestic and distinct. The distinct water supply is used for fire protection services only; the domestic water supply is provided for all other uses. San Francisco does not have any public facilities for furnishing processed water to manufacturers that have special water needs. These water needs have to be provided by the private industries themselves.

San Francisco's sewage disposal system has strict requirements as to kind of waste it will accept into its sewage system. Plants which discharge a particular effluent into the disposal system are often subject to pre-treatment requirements for that effluent before it is dumped into the sewer. Such plants, bound by pre-treatment requirements in San Francisco, may choose to locate in other cities which have less stringent requirements.

Improved service may cost money. However, facilitating hookups to the city's sewage lines for new industries and providing quantities of water at various pressures or mixing into the water certain chemicals may involve a minimal amount of cost and inconvenience to the city and in the long run will improve relations with local industries.

CHILD CARE

Major Characteristic of Intervention Strategy: Service to Industry

Problem Treated

Many women who want to be in the labor force are not able to work because of child care responsibilities.

Importance of the Problem to Industry

The absence of women with young children from the labor market would be a serious problem if there were more jobs available than people to fill them. However, since World War II the inability of women to find adequate and accessible day care services for their children has not been a major issue to employers in the private sector.

Purpose of Tool

The purpose of the tool is to provide child care facilities near a parent's place of work.

Components of Tool

Presently, cities receive federal monies which must be matched with local funds to establish child care centers. These centers are usually located in residential or commercial areas, but are rarely placed in industrial zones.

This tool is designed to fund and establish child care facilities in areas where labor-intensive industry takes place. Such facilities could be subsidized and shared by many firms who employ working parents.

Area Impacted by Tool

Day care facilities will serve particular industrial sites. Employees who benefit from the service, however, may free up public or private child care facilities elsewhere in the city.

Sectors Affected by Tool

Industrial

Feasibility of Tool in San Francisco

San Francisco has many public and private child care facilities. Most of those which are public are funded by federal monies distributed by the California Department of Education. To date, few if any facilities have been located in industrial areas. It is entirely possible that San Francisco could apply for a federal grant to establish child care centers in industrial areas on a trial basis.

REFUSE COLLECTION AND SOLID WASTE DISPOSAL

Major Characteristic of Intervention Strategy: Service to Industry

Problem Treated

Industrial waste has traditionally been ineligible for public refuse collection. Firms provide for their own collection service by contract with a private company, or by hauling their own refuse themselves. Some industries feel that the amount of refuse that needs to be collected for their particular operation is no greater than commercial or other businesses which have their refuse collected by public service.

Importance of the Problem to Industry

The lack of public provisions for refuse collection and solid waste disposal for industrial uses is not a significant problem to firms, but a continual irritant. However, it is unlikely that an industry will choose to relocate because of its dissatisfaction with the absence of public refuse collection and solid waste disposal facilities. Surveys concerning satisfaction with collection operations indicate that industries would prefer that the city at least make the appropriate arrangements for refuse collection by private companies.

Purpose of Tool

This tool is designed to promote more city involvement in the planning and operation of refuse collection and solid waste disposal services for industries.

Components of Tool

Three areas of concern are at issue here:

1. Planning for Refuse Collection and Solid Waste Disposal
2. Refuse Disposal Municipalization
3. Regulation of Service Rates

Planning for Refuse Collection and Solid Waste Disposal -- Industries which are new to the city are often unaware of who collects refuse and solid waste, what the rates are, and how arrangements are made to procure the service. A city could do much to facilitate the arrangements and planning of this service. If refuse collection and solid waste disposal are contracted out to a private company, a city agent could approach the new industry and make the necessary arrangements. More explicitly, the agent could act on behalf of the firm in negotiating a contract which would provide the necessary services for the industry.

Refuse Disposal Municipalization -- A city could choose to take full responsibility for refuse collection and solid waste disposal for all industries.

Regulation of Service Rates -- Cities must see to it that the rates for refuse collection of solid waste disposal are enough to cover costs but low enough to be attractive for prospective industries.

Area Impacted by Tool

Plant sites.

Sectors Affected by Tool

Industrial

Feasibility of Tool in San Francisco

In San Francisco virtually all the refuse disposal is carried out by private scavenger companies under franchises from the city government. Most of the refuse is deposited in dumps, crushed to more compact size by heavy equipment, and covered with a layer of soil. This process is called "sanitary landfill" and usually occurs by dumping the refuse into the Bay.

San Francisco has a serious problems because its scavenger companies are running out of disposal space and the remaining acreage in San Mateo is soon to be restricted to waste other than garbage. Alternative methods of disposal will have to be planned for future needs. The city can be inspirational in facilitating the development and planning of the new alternatives. For example, one approach to solid waste management is resource recovery. By providing facilities which separate out those resources within the wastes that are recyclable San Francisco could become a more attractive place to industries which would benefit from this service.

INFRASTRUCTURE IMPROVEMENT AND DEVELOPMENT

Major Characteristic of Intervention Strategy: Adjusting operating and capital budgets to facilitate improvements in streets, lighting, drainage, and parking.

Problem Treated

The infrastructure of the city generally influences its attractiveness and usability. Inadequate provisions for parking and access have often created congestion in areas of intensive land use. A lack of enough parking spaces, especially in areas where public transportation is not feasible, is the source of frequent complaints from employees and employers. The inability of a vendor to make deliveries is another area of concern. Narrow or congested streets which must serve multiple functions as places to leave cars, places to make deliveries, main thoroughfares, and safety lanes for fire service are prone to be a compound nuisance.

In areas of the city with high crime rates, the absence of enough street lighting usually exacerbates the incidence of crime. Because of the possibility of assault or robbery, firms which employ workers on night shifts or whose quitting hours occur after sundown have difficulty recruiting workers.

Importance of the Problem to Industry

We are talking about three problems here: access, parking, and safety. These problems are individually and compoundly extremely important to a firm when making its locational decisions.

Purpose of Tool

The purpose of this tool is to make the city more attractive to existing and potential industries through infrastructure improvement and development. This tool will also demonstrate the city's commitment to the maintenance of its land resource.

Components of Tool

The following components are geared toward specific problems that can be modified by infrastructure development and improvement.

1. Streets

- Resurface streets on a regularly scheduled basis to improve safety for vehicles and pedestrians.
- Widen streets where necessary to improve traffic flow and alleviate congestion.

- When appropriate and feasible, close off small streets so that industries can use additional space for pick-up and delivery and pedestrian use.
- Install traffic control devices where appropriate.

2. Lighting

- Install lights in high crime areas to promote the safety of people who must use that area at nighttime.
- Increase lighting in areas of multiple use where visibility is a critical factor to both vehicles and pedestrians.

3. Drainage

- On a seasonal basis, clean out catch basins and drainage ditches to facilitate the quick runoff of water.
- Properly resurface and slope streets and parking facilities to avoid flooding and the decay of surfaces and danger which results.

4. Parking -- Provide adequate on-street or off-street parking to users of area. This may involve the acquisition of land by public agencies for new parking facilities.

Area Impacted by Tool

Infrastructure improvements and developments are both remedial and preventive. All areas in the city or planning areas will be affected by these tools on a routine basis.

Sectors Affected by Tool

All sectors will be affected by this tool. Infrastructure improvements not only affect those industries directly located in a particular area, but also those industries linked to firms at those locations.

Feasibility of Tool in San Francisco

An improvement and maintenance program for various aspects of the city's infrastructure is a viable and necessary tool. The preventive aspects of this tool are as important as the remedial or corrective aspects. Many industries already located in the city have immediate needs in the area of infrastructure improvement. However, in the long run the lifetime of any street can be extended by regular servicing of the surface area and drainage systems.

It is entirely possible that the City of San Francisco could undertake a program which would entail both the preventive and immediate repair of certain aspects of the infrastructure. This would involve a survey of

critical areas which require immediate attention and areas which will need attention in the future. Such a program would necessitate direct communication with those industries and some way of channeling their needs into the short- and long-run planning for infrastructure improvement and development.

PROTECTING INDUSTRIAL ZONES

Major Characteristic of Intervention Strategy: Zoning

Problem Treated

In many instances, the value of land used for industrial purposes is not competitive with the value of land used for residential and commercial uses. Central cities which have experienced a massive exodus of heavy industry from their midsts have adopted a policy of rezoning their industrial land for other uses. Such a policy tends to limit the amount of land available for industries to the least desirable location. While it may improve the tax base of the city as a whole, it tends to reduce the attractiveness of the city as a place for industry to locate. This occurs in two ways. First, an industry may be reluctant to locate in a city where industries are offered the least desirable land. Second, an industry which knows that the city is looking to increase its tax base may feel insecure in locating there because at some future time it might be nudged out by land uses more valuable to the city in terms of taxes.

Importance of the Problem to Industry

A city's attitude towards industry is of the utmost importance both to existing firms and to potential firms. The threat of being priced off land could be very detrimental to the climate of business. While it is not in itself a reason for a company to leave, it is certainly a factor in determining whether a firm might choose to locate in a particular area.

Purpose of Tool

To use zoning as a way to maintain low rents for industry and to promote a policy of friendliness to potential industrial users.

Components of Tool

Industrial zones can be protected by special clauses in local ordinances requiring careful review processes prior to the down zoning of an industrial parcel.

Feasibility of Tool in San Francisco

Currently zoning changes in San Francisco are made at the discretion of zoning officials. Appeals involve a long application and approval procedure. Protecting industrial zones occurs, de facto, because major zoning changes are difficult to accomplish.

FLEXIBLE STANDARDS

Major Characteristic of Intervention Strategy: Zoning

Problem Treated

Areas zoned for industrial uses frequently have to abide by very stringent building code requirements. While these standards are generally applicable to all industries, oftentimes the requirements for safety may not necessarily apply to a particular industry. A potential firm looking for a new site for its plant facility will generally inquire as to the zoning regulations within that particular municipality. If zoning regulations are particularly inflexible, the firm will look elsewhere where variances in the standards might be easily procured.

Importance of the Problem to Industry

The importance of flexible standards in zoning building regulations is critical for firms which are considering a particular city for the location of their plants. Renovating an old building so that it conforms with current code standards or constructing a building with safety factors which exceed the requirements of a particular plant operation could add a substantial cost to a firm's capital outlay for its new plant. These additional costs could prove to be decisive in a firm's choice of location.

Purpose of Tool

Flexible standards in building requirements are designed to be responsive to the needs of particular firms that wish to locate or relocate within the city limits. Such a policy need not be a compromise of safety standards, but rather, expressive of a city policy to be flexible and accommodating to its own industries and prospective industries.

Components of Tool

In order to adopt a flexible standard approach to building code requirements, code requirements would have to be divided into those factors which are applicable to all buildings and those which pertain to specific uses. Applicants for building certification would be required to outline in detail the space allocation and utilization of all floor area, as well as construction specifications for the building itself. Code requirements would be adjusted to meet the safety needs of a particular use.

Feasibility of Tool in San Francisco

In San Francisco, all buildings are subject to basically the same standards for safety. There are few variances in the code. A new flexible standard will require a dynamic systems approach to building inspection.

ESTABLISHMENT OF ZONING COURTS

Major Characteristic of Intervention Strategy: Zoning

Problem Treated

Throughout the country, there are countless examples of land zoned for uses for which there is no visible market, either now or in the foreseeable future. Such an oversupply of zoned land usually causes two major reactions -- first, an inflated and often false notion as to a realistic monetary value of the property in question, and second, a situation which tends to argue against rezoning in a more suitable location. When a property eludes development for so many years after obtaining a certain zoning classification, it is reasonable to assume that the designated land use is inappropriate. However, many cities have archaic and arduous procedures for changing the zoning status of a particular parcel.

Importance of the Problem to Industry

A prospective industry has certain requirements that it must meet for locating its plants. When surveying potential sites, it may find that a parcel of land which is appropriate in a city is not currently zoned for industrial use. In places where zoning variances are difficult to procure, a firm seeking a variance may become discouraged and look elsewhere for a site location.

There are many instances in this country where large corporations have internalized various operations within their organizations. Frequently, for reasons of either expansion or consolidation, a corporation may decide to spatially rearrange its business functions. Converting its property from administrative use to light manufacturing, for example, would require a change in zoning status from the particular municipality where the administrative office is located. Difficulty in obtaining a zoning variance may result in the loss of that firm and the jobs it has created for that city.

Components of Tool

A zoning court could operate in the field of zoning much as a tax court operates in its special field. This court would be staffed by professional hearing examiners trained in planning and zoning law, and could be established and empowered to make binding decisions on the interpretation of the spirit and intent of the law. In addition, the court could divert much of the controversial aspects of zoning procedure away from elected officials, and in doing so increase the effectiveness of those officials in providing legislation on zoning.

To achieve more flexibility and equitability in making zoning requests, and to minimize the possibility of classifying a piece of land for use to which it may never be put, a form of time limited zoning permits could be issued by the zoning court. Such a zoning permit would expire if not consummated within a reasonable period.

Area Impacted by Tool

Planning area.

Sectors Affected by Tool

All people and organizations which come under land use and zoning regulations.

Feasibility of Tool in San Francisco

Presently, zoning appeals are funneled through a long application procedure, which involves approval by the Planning Commission and a final decision made at the discretion of appointed members of the Board of Permit Appeals. A zoning court is a procedural change in the appeal process. Assuming that its exact powers and jurisdiction could be worked out, such a court could feasibly be instituted to provide a quick response to needed changes in land utilization.

MIXED USE DEVELOPMENT

Major Characteristics of Intervention Strategy: Zoning and Development

Problem Treated

Mixed use development tries to remedy the suboptimization of land barred from certain types of use by exclusionary zoning.

Importance of the Problem to Industry

Some industries such as retail and other commercial industries prosper when they are located close by their potential markets. Exclusionary zoning is a problem for these kinds of industries.

Purpose of Tool

The purpose of mixed use development is to attract new and existing industries to the city. It provides operating expense efficiencies through shared infrastructure and internal markets which nurture local demand for goods and services produced. It may also be used as a corrective tool to relieve congestion or overloaded disposal facilities elsewhere in the city.

Components of Tool

Mixed use development refers to the combination of multiple and distinct land uses into a single integrated development. Such projects range in density, form, and content from the high-density urban complex of a relatively small site to the low-density suburban new town or PUD. Despite their obvious differences, a common characteristic in mixed use development is the bringing together of a variety of separate land uses into a configuration which relates each of the components functionally as well as physically.

In addition to sharing infrastructure, mixed use development provides capital cost and operating expense efficiencies for such public services as transportation, access, and utilities.

Area Impacted by Tool

Planning area, site, block. Mixed use development can occur on a variety of scales.

Sectors Affected by Tool

All sectors -- industrial, retail, wholesale, and residential sectors -- may become involved.

Feasibility of Tool in San Francisco

Although mixed use development has not been used as an intervention tool in San Francisco, it has occurred de facto in at least two different situations. Vertical mixed use has occurred in many neighborhoods. Manufacturing or retailing takes place on lower levels, residential activity on upper floors. The other instance of mixed use development has occurred under urban renewal programs where a large site has been demolished and redesigned for multiple use. To date, the mixing of heavy industry with other land uses has not been considered as a serious intervention tool.

Case Studies

Mixed use development has been tried with varying degrees of success in cities across the country. In Chicago the Illinois Center is an 83-acre project which is now under construction. The final goal includes office and retail space for 80,000 employees and housing for up to 50,000 persons. Mixed use development has also occurred in a suburban setting. In Echalon, New Jersey, a private development company is now completing an urban center of 400 acres which is developed around a regional shopping mall. There are other instances of mixed use development such as Columbia and Montgomery Village in Maryland.

The degree of success of mixed use development depends largely on the existing circumstances and the quality of planning. The price for land and scale of acquisitions, as well as the market potential for the specified activities that will take place in the mixed use development, are key factors in the viability of any given project.

LEGISLATIVE TOOLS FOR INDUSTRIAL DEVELOPMENT

Major Characteristic of Intervention Strategy: This tool describes the legislative mandate for public agencies to acquire, develop, and dispose of land.

Problem Treated

Many lands which could be put to good use stand abandoned and vacant in a city. These parcels are a potential site for expanding or new industry. Because of legal complications or lack of private development capital, a firm which wants to make use of that land may find it impossible to acquire and develop it.

Importance of the Problem to Industry

The acquisition and development of land is a major cost to industry. Firms that are just starting out or firms that wish to move in and/or expand need access to huge amounts of capital in order to carry out their plans. Their timetables for development usually correspond to the availability of monetary resources and potential sites. The putting together of small parcels for a large industrial site or mixed use development is often a difficult task for a private developer.

Purpose of Tool

The purpose of legislation for economic development or redevelopment is to vest in a specialized public agency the powers to acquire, develop, and dispose of land for the public interest.

Components of Tool

Three aspects of public development include the acquisition, development, and disposal of land. Within these areas various public agencies are given a legislative mandate to perform certain tasks.

Acquisition of Land

Certain public agencies may be entitled to purchase land at the market value or below market value, condemn it and take it by eminent domain, and/or receive gifts of land from private sources.

Development of Land

Historically, many public agencies have been involved in the development or redevelopment of land. In some instances, they have been the actual developer, in others they have been the facilitators of private sector development. The following is a list of tools which have enabled government to participate in the development process:

1. Land Banking -- Land banking involves land acquisition by any of the above methods and its phased availability to potential developers. Land banking is a device whereby a local government can, in effect, impound property until such time as it wants to release it for new development. It is a way in which development trends and land prices can be stabilized and controlled at the local level.

2. Urban Renewal -- Urban renewal was a program which involved the designation of certain areas as renewal sites, the acquisition of land by either purchase or eminent domain, and the subsequent development for specified land uses. Areas redeveloped were generally large in scope. Plans for development usually conformed to master plans for the entire city.

3. Economic Development Industrial Corporations -- An example of this is the development agency which was brought into existence by recent Massachusetts legislation. The agency is empowered to acquire, develop, and sell back to the private sector available land which it designates as being in the public interest to develop. Unlike many urban renewal programs, an EDIC agency is empowered to take land by eminent domain and to begin the necessary financing for the acquisition and development of a particular parcel. The parcels which are developed need not be on the scale of previous urban renewal projects.

Because EDIC legislation is relatively new, there are several aspects of the law yet to be tested in court. For example, as written in the current legislation, it is not clear if an EDIC is empowered to acquire, develop, and continue to own property within its jurisdiction. The law is ambiguous as to whether a municipality can in fact maintain its ownership of property use in the private sector and thereby control its utilization.

Disposal of Land

There is a variety of ways that a public agency might dispose of land it has acquired and developed. It may sell the land parcel at market value or below market value, it may give the parcel as a gift or entrust it to a public foundation, the land can be exchanged for another parcel of land, or the land may be leased. The legality of each method of disposal varies from one municipality to another.

Area Impacted by Tool

Planning area.

Sectors Affected by Tool

All sectors which come under the jurisdictions of various development programs.

CITY PROMOTION

Major Characteristic of Intervention Strategy: The creation and maintenance of a good "business climate."

Problem Treated

Prospective industries, new to a particular area, often seek advice from municipal officials or the local chamber of commerce. The quality of educational and cultural facilities, the nature of the housing stock, and the natural advantages of a particular locality can be important factors in a firm's locational decisions. The absence of information concerning the local labor market and the available municipal services could serve to discourage a potential locatee.

Importance of the Problem to Industry

As of 1972, the number of development agencies in existence was estimated at some 14,000-15,000 across the country. Surveys interviewing development agencies and firms which recently located in a particular area revealed that the importance of community groups organized for the specific purpose of promoting industrial development is rated very high among members of the industrial development agencies and not so high among executives of firms locating in the particular areas. The results of these surveys indicate that the bulk of funds spent by development agencies is frequently used for factors which management says are not of prime importance in influencing plant locations. Colorful brochures, descriptive magazine ads, and newspaper headings do not seriously compete with such location factors as markets and costs. All things being equal, the services provided by a development agency may influence a firm's decision about whether to locate in this city.

Purpose of Tool

In the long run, the promotional activity of a public agency may help to maintain and attract industry. Its mandate is to be functional, dynamic, and effective as a lobby for better city service and industrial amenities.

Components of Tool

This tool is designed to improve the climate of business through the provision of information concerning public services, market conditions, and local amenities. Within its scope is the promotion of non-basic activities and services such as retail stores, restaurants, and parks which will serve and enhance the environment of the industrial area.

Implicit in such a tool is a close relationship between public promotional agencies and private industry. Such an agency must be attuned to the needs of existing and prospective industries and must have sufficient influence within the various branches of government to funnel requests and complaints in such a way as to insure quick response.

Area Impacted by Tool

Planning area.

Sectors Affected by Tool

Industrial and linked sectors which are supported by local industry (i.e., service sector and retail).

Feasibility of Tool in San Francisco

The responsibility for providing information to prospective industries and promoting non-basic linked activity is shared by a variety of public and private groups. The Chamber of Commerce works closely with the Mayor's Office collecting information for prospective developers. However, there is no central office whose jurisdiction includes the improvement of city-wide services. Complaints concerning deficiencies are often directed at the Board of Supervisors.

It is entirely possible that the activities within the Mayor's Office could be enlarged to encompass these other promotional and provisional activities in such a way as to provide comprehensive and extensive services to existing and prospective firms.

INTERGOVERNMENTAL POLICIES

Major Characteristic of Intervention Strategy: Use of federal funds available under the Housing and Community Development Act of 1974 for selective acquisition of real property for clearance or acquisition for rehabilitation and conservation activities. The first priority for such activities shall be benefit to low- and moderate-income families or assistance in preventing or eliminating slums or blight.

Problem Treated

Any program which shall be funded under the Housing and Community Development Act of 1974 shall have as its major problem orientation the following:

- The elimination or prevention of slums, blight, and deterioration.
- The provision of improved community facilities and public improvements including supporting health and social services.

The program must also provide, as appropriate, detailed housing assistance programs which will be undertaken as part of the block funding which municipalities will seek under this act.

Importance of the Problem to Industry

Historically manufacturing and industrial firms have considered existing governmental programs inadequate to assist them in meeting changing production requirements so as to maintain successful operations in the central cities. An important element which the new act can provide is the opportunity for these cities with greater knowledge of local industrial and manufacturing problems to develop more responsive, locally determined programs for the selective renewal and/or rehabilitation of industrial areas which can accommodate existing and (perhaps) expanding firms.

Purpose of Tool

The major purpose of the new act is to finance programs which can enhance the economic status of low- and moderate-income families. To the extent that a program primarily geared to retention and expansion of industry in San Francisco would increase employment opportunities and stabilize land use patterns, there would be a beneficial impact upon lower income groups in the city.

If the city is successful in developing a comprehensive program of responsive treatment for industrial areas needing such treatment, this will be the first major indication on the city's part of a commitment to assist industrial/manufacturing firms in developing an environment that best suits their needs and hence encourages them to remain in the city.

Components of Tool

In the past, when municipalities utilized Title I funding for specific projects, the use of such funds in "nonresidential exception" programs met with limited success. A good example is the India Basin industrial park, the major industrial renewal program undertaken in San Francisco.

It is safe to say that this program (Title I financing of nonresidential development) has not met with the rapid success for which many community leaders and planning officials had hoped. The major justification for such programs had been anticipation of an increased tax base and increased employment opportunities for adjacent residents. An offsetting factor which has yet to be successfully overcome (in terms of marketing) is the disinclination of manufacturing firms, with their continuous shift to more space per worker and to one-floor plants, to purchase and develop higher cost space which is made available in central city areas. Projects such as the Golden Gateway Center and the Embarcadero Center reinforce the general observation that the more rapidly growing professional personal services in central cities offer a better prospect for nonresidential renewal than do traditional manufacturing and industrial activities.

In the Housing and Community Development Act of 1974, which replaces urban renewal and neighborhood development program (NDP) grants, the major thrust is the development of three-year plans which identify community development needs and objectives developed in the course of areawide development planning, reflecting national urban growth policies. Such plans presume the development of a program addressing the following:

- Identified activities which will meet community development needs and objectives,
- Indicated resources, other than assistance under the program, expected to be available to meet such needs and objectives, and
- Identified affected environmental factors.

One can assert that under the more flexible 1974 act, there is less emphasis upon large-scale formal projects; consequently, it is hoped that selective use of block grants for treatment of industrial and commercial areas in a manner responsive to the specific needs of particular non-residential activities in such areas will meet with success.

So far, no major industrial renewal programs have been initiated under the new act. However, if a sufficiently comprehensive three-year program addressing the issue of selective industrial renewal can be developed in the Office of Community Development in San Francisco, this may be an opportunity for San Francisco to provide guidance as to how such programs may be undertaken in the future.

The program components which should be developed in seeking block grants available under the act involve:

- A commitment by the city to retain existing manufacturing and industrial activities in the city.
- The development of a package of public intervention tools which can be utilized for this goal.
- Public recognition of the fact that stabilized manufacturing and industrial activity in the city benefits low- and moderate-income residents in terms of increased employment opportunities, stabilization of land use patterns, and a more stable environment in which to provide equally needed federal funds for the provision of low- and moderate-income housing.
- The identification of other resources which can be used by the city to halt the loss of manufacturing/industry.

Area Impacted by Tool

A comprehensive program for selective treatment of industrial areas based upon a full complement of appropriate intervention tools will range from site-specific to communitywide in scope. In other words, based upon the area being analyzed and the treatment identified as necessary, the program would be flexible enough to affect a particular site and industry, several firms in a one- or two-block area, or perhaps an entire industrial area or district.

Sectors Affected by Tool

This program could be addressed to all sectors of commercial, manufacturing, and industrial activity in San Francisco. The major determinant will be location and identification of an area needing treatment. The next step would be to identify the series of tools to be utilized. In all cases tools utilized would be specifically addressed to problems of site utilization and public service provision. In some situations identified problems would require a response tailored to the unique or particular operating requirements of a specific industry or manufacturing operation.

Feasibility of Tool in San Francisco

For any program involving federal block grants to be allocated to San Francisco for nonresidential treatment, a rather detailed program for selective treatment must be developed. There must be a fairly extensive commitment on the part of the city to retain industrial and manufacturing activity as a viable and strong element of overall land use in the city. At present, such a priority commitment does not exist because of the lack of citywide awareness of a need for such a program.

If in the course of its work on the Commerce Industry Element the City Planning Department can persuasively argue that such a commitment is needed, it would seem feasible that a flexible grant could be selectively

utilized for treatment of specified areas within the city's industrial districts. A major consideration here is the recognition by the city and proponents of industrial and manufacturing expansion in the city that public efforts should be selective in both place and scope, reflecting the realities of business relocation decisions which often involve factors which public actions cannot affect.

OPTIMAL PROGRAMS FOR SAN FRANCISCO

Tools which can be most effective in retaining existing industries are those which can help to ameliorate the problems related to location in San Francisco. Our previous working paper has suggested that the scope of many of these problems lies outside the realm of issues which can be affected by city policies. Therefore, the ability of any city policy to control the location and movement of firms is severely limited. Our research has shown, however, that in some instances the role of city governments may be pivotal in influencing a firm's location decision. City controllable policies become pivotal only when an analysis of the most important considerations shows them to be equivalent in alternative site areas. Therefore, in choosing tools which will be most effective we should not make the assumption that utilization of these tools will alleviate San Francisco's industrial out-migration problem. Rather, these tools will have an important influence on industry location for only a small percentage of all businesses.

Some of the tools available to the city will prove to be more effective than others. Specifically, those which treat these potentially pivotal problems should receive most of the city's consideration. Often the required actions will necessitate the coordinated use of more than one tool and may require the proper interaction of several if it is to be effective.

The nature of the problems for which tools are available allows us to draw several general guidelines which should affect the city's intervention strategy in almost every case. First, because of the limited amount of resources available to the city, it should endeavor to concentrate on using tools on a case-by-case basis, where they are designed to relieve the problems facing a specific business or group of businesses. Because the relocation decisions of many establishments will not be affected by any of the tools since they are unable to affect the establishment's most important considerations, providing them with the services of the programs will not retain additional industries in the city. Therefore, the use of these tools should be concentrated on those industries which have not already decided to leave San Francisco for reasons other than those addressable by the tools. There will, of course, be cases in which other industries may benefit from the program and in some rare cases this additional service may cause them to reverse their out-migration decision.

The second characteristic of any city intervention program should be flexibility. Because the tools will often be designed to ameliorate the problems faced by one establishment, they should include enough flexibility to allow them to meet the requirements of specific situations. While this may inhibit the ability of the city to plan for the amount of resources which should be committed to the several assistance programs, it will also minimize the amount of resources which will be used by the programs.

Several problems which are currently affecting relocation decisions and which can be affected by city action are:

- Requesting and receiving city services
- Security of employees and property
- Parking and adequate public transportation
- Expansion needs
- Encroachment of incompatible land uses

In the following pages, the tools or set of tools which can be used to reduce the severity of these problems is discussed. The city should now concentrate on identifying the specific areas in which these problems are of importance and on designing the implementation techniques called for by each tool which can affect these problems.

Because of the lack of information, the "success" rate of any of the tools used to correct these problems cannot be predicted. We have suggested the city concentrate on these problems solely because it appears that it can be more successful by trying to correct these problems as opposed to any others which it can affect.

A. REQUESTING AND RECEIVING CITY SERVICES

The first component of any intervention program should be a method of determining what industrial needs can be fulfilled by the city and the importance of these problems to industry in a marginal context. The Mayor's Council on Economic Development could be empowered to create an ombudsman office to receive industrial requests and to insure a reasonable response is made by the appropriate city department. Currently, industries must request services from the department in charge of the specific area of the request. Because of the number of different agencies in the city, an industry may not know whom to contact in regard to a specific problem. In addition, some problems can be best dealt with through the combined actions of a number of departments. It would be difficulty for a private industry to get the necessary cooperation.

The role of the industrial ombudsman program would be to insure that reasonable industry requests received prompt attention from the city. In addition, it could also be a source of information concerning local markets, locations, sizes and costs of available space, and the types of services the city can provide industry.

To be effective, however, the agency must have the ability to promise action and to ensure that the necessary corrective measures are then made. This would mean that the various line departments which provide the actual

services must be responsive to the requests of the ombudsman. A program which is allowed to exist in name only will not be able to provide services effectively and may only serve to increase industry's dissatisfaction with city government.

The creation of an effective agency could improve the city's business climate. First, it would provide industry with one place where it could tell the city what types of services it needs. This would eliminate the need to trace through many agencies to determine which were responsible for the problems. Secondly, it would provide industry with a source which it knew would be there in case problems developed. This could lower the perceived importance industry gives to problems which it feels will not be corrected.

B. SECURITY OF EMPLOYEES AND PROPERTY

A problem cited in several circles as being one reason for industry abandonment of certain parts of San Francisco is the lack of security available for employees and property.* Security, more than any other problem, falls within the responsibilities of the city. Therefore, it, more than any other problem, is susceptible to city control. There are two facets of the problem. The first is the high amount of crime which does take place in some industrial areas, causing large losses for industries and endangering employees. In some instances, firms in these areas have trouble attracting qualified people to work in these neighborhoods. Also, industries must spend considerable time and effort maintaining security. The second factor is what industry and employees perceive the crime rate to be. This causes them to be fearful and will affect any plans for expansion and relocation. It also affects employee turnover.

Several tools can be used to make industrial areas safer. An increase in police presence should provide a greater sense of security for both employers and employees. There is a problem of determining whether increases in presence will actually result in lower crime rates, but previous studies have shown significant correlation. Improvement of lighting in industrial areas in conjunction with an increase in police presence should make the areas safer for employees and will decrease theft and vandalism.

Security on the public transportation system would also be beneficial. Several recent reports have highlighted the need for increased security on the MUNI system. Increased protection on those routes which serve the industrial areas would make use of the system safer for local employees and thereby reduce the rate of employee turnover and might also increase the size of the labor force which is willing to work in that area.

*Interview with Lex Beyers, San Francisco Chamber of Commerce, November 12, 1974

These three tools -- increased police protection, increased lighting, and safer public transportation -- cannot be used solely for one industry but rather must be utilized in programs designed to benefit entire industrial zones. However, the problem of security will not be concentrated on one site, but will cover a much larger area.

C. PARKING AND ADEQUATE PUBLIC TRANSPORTATION

Our previous working memorandum has shown that San Francisco is a net importer of blue-collar labor. We have also shown that accessibility to a suitable labor force is a major factor in determining industrial location. None of the public transportation systems which provide commuter service from outlying communities to San Francisco provides a high level of service to the industrial areas of the city. Therefore, commuting blue-collar workers are almost required to provide their own transportation. As a result, parking space availability is a problem in many industrial areas. In comparison with suburban industrial centers, the lack of parking in industrial areas is a critical problem and may affect the relocation decision of some businesses.

Under optimal conditions, the city should be able to influence these transit systems to improve their services to the industrial areas. However, the ability of the city to do this is probably limited. Therefore, the city should be prepared to take action to relieve the parking problem faced by commuting blue-collar workers.

To relieve this problem the parking tools discussed in Chapter III could be utilized to insure adequate parking. In special instances using the power of eminent domain to provide adequate parking should be considered. Also, the use of city-owned parcels in industrial zones should be reviewed and unneeded parcels should be considered as potential locations for parking facilities.

While the city may not be able to affect the services provided to the industrial areas by the commuter public transportation services, it can influence the services offered to these areas by the MUNI system. Some of the city's industrial areas are poorly served by routes which also serve blue-collar residential areas of the city. Therefore, the transit time from residential areas to the industrial zones is inordinately long. Improved service would make these residential areas more attractive to blue-collar workers and could also reduce the parking problems currently encountered in industrial zones.

D. EXPANSION NEEDS

A major complaint many San Francisco industries have with their present locations is a lack of room for expansion. While the city can do relatively little to correct this problem, some of the tools can be used to satisfy the expansion desires of some firms.

The city does have the power to close little used streets and alleys. This practice would enable businesses located on these streets to use them for loading and unloading purposes without having to worry about congesting local traffic.

In some instances the city may be able to use its powers of condemnation or eminent domain to assist a business in obtaining a site. However, it appears that the state Constitution would prohibit either low-cost sale or rental of sites obtained in this manner.

There may be a possibility that the new Housing and Community Development Act of 1974 may provide some mechanisms which can be used to aid industrial expansion. However, there will be great competition among city agencies for these funds, and industrial needs will probably not receive a high priority.

The city could begin to develop a land bank by accumulating the parcels it receives through a variety of sources. Land could then be provided to industries which meet certain criteria which might include commitment to a San Francisco location, programs to encourage high participation rates by minorities, and job mobility.

The establishment of a zoning court to provide a faster method of granting variances would also increase the ability of the city to aid reasonable expansion proposals.

Unfortunately, these tools can be useful in only a small number of cases. However, some industries which cite lack of room for expansion as a reason for their relocation to the suburbs do not enlarge in the suburbs. Therefore, part of the expansionary desire is illusionary. By providing some mechanisms which could provide room for expansion within San Francisco, the city might be able to convince some industries that their expansion needs could be met within the city limits.

E. ENCROACHMENT OF INCOMPATIBLE LAND USES

Historically, industrial land use has been looked upon as an undesirable neighbor. In many communities it was located where it would not interfere with more desirable types of land use. Currently, however, these other types of land uses have begun to encroach upon industrial areas. The result is rent competition between industrial and commercial and office uses. In such situations the commercial and office uses usually win because of the higher rents they are generally willing to pay. The result is a forced relocation of industry. In some cases the need to move at all may lead industries out of the city.

Some of the tools open to the city may be useful in tackling this problem. The city can take a stand against allowing non-industrial uses to develop in industrial zones. This can be done by ensuring that the zoning ordinance prohibits non-industrial uses in industrial zones.

In some areas vertical mixed use zoning may conserve industrial rents and space. The use of the ground floor for commercial activities would allow a parcel to generate a high income while reserving space on the upper floors for industry. The zoning ordinance should be written to maintain upper floors for industrial use.

Unlike the other problem areas, no continuing need for city services is required to implement the tools the city can use to deal with this problem. In addition, both the cause and solution to this problem are directly under city control, meaning that city action or inaction in this area will be decisive.

